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Addresses.

GENERAL PRACTICE A CONTINUOUS POST-GRADUATE CLINIC.*

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Both the practitioner and the specialist are compelled to give attention to the whole science of medicine, and after all, they stand on common ground. The ideal practitioner must be quick to recognize the early manifestations of grave diseases which require the specialist's care, while the ideal specialist must as readily diagnose complications which may prove more serious to the individual than the disease he is called on to treat.

The specialist is also dependent on the practitioner for information concerning the ultimate results of his work. He should learn his successes and failures from the practitioner, for, after all, the test of any operation or treatment is the relief experienced by the patient. An operation, no matter how brilliant, is a failure unless it relieves or cures the subject, and the ultimate verdict must come from the family physician.

The general practitioner is first to deal with those cases which require the specialist's care, and on his diagnostic skill and management of the case frequently depends the future of the patient. Let him mistake panophthalmitis for a conjunctivitis, and treat it a few days with eye washes, and the best oculist in the land can not undo the mischief. A suppuration of the mastoid which has already involved the meninges, will baffle the skill of the best-trained otologist.

At a meeting like this, what better service can a specialist render than to familiarize his brother, the general practitioner, with the symptoms which should warn him of danger, and thus teach him to early recognize serious diseases, instruct him in the best method of management while under his care, and counsel him in the treatment of cases which come safely and properly within his province.

Much that has been said of the injustice to the general worker in his relation to the specialist has no foundation in fact. Every conscientious medical man holds the good to the patient as the paramount consideration, and would not undertake to treat him if he could be better cared for by a specialist. None can deny that technical skill is acquired by practice only, and it is impossible for the general worker to attain proficiency in every branch. Yet in many emergencies such skill is indispensable. I have found that those physicians who frankly acknowledge lack of skill in lines of practice unfamiliar to them, and who recommend the sufferers to seek other aid when it is best for them to do so, have held the confidence and respect of their clients. There is nothing more dangerous, in these days of enlightenment, than the assumption of knowledge one does not possess, for exposure is almost sure to follow with corresponding loss of prestige.

Nearly all the members of this association are practitioners, general and special; the men who apply the truths of our science to the relief of suffering humanity. To the student of science surrounded by the best conditions, we must leave most of the work of investigation and higher research. His discoveries come to us for their proof and final test—we are the supreme court—and their value is determined by the results we obtain.

While we give all honor to these workers, we have the satisfaction of knowing that many of the most important advances have been made by men in our class. Huhlings Jackson, by careful study of the form of epilepsy which bears his name, pointed out that there were motor areas of the cerebral cortex, and gave Ferrier the impulse to make the experiments which put cerebral localization on a sure foundation. Ephraim McDowell and Marion Sims, while humble practitioners, were the pioneers in modern surgical advancement.

I wish I had some new discovery or thought to offer you, for what dearer ambition has any of us than that he may add something new to the science we love. Alas! the good fortune falls to but few. The best I can offer is some thoughts which have aided me and formed the motive in my humble work. What I have to say is not new to any of you, and I am glad to add, the same impulses have dominated us all. The rank and file of the profession have been pushing forward to higher ideals, and the average ability of all classes of workers advances materially from year to year.

Mr. Augustus Thomas, the celebrated playwright, in presenting a toast, said he had thought much about what he should say, and had finally determined to express just one idea, and he thought in the roundup of the evening he would average up very well with the other speakers.

The special idea I want to express is the necessity of careful, accurate observation and study of your cases, and above all, the correct diagnosis of each one as a necessary requisite to advancement in your profession.

Experience is valuable in proportion as it is founded on accurate observation. If you incorrectly diagnose your case, how can you draw correct conclusions from your observations and treatment? If your premises are faulty, so also must be your deductions. I have often thought that the experience of the physician who does not thoroughly and thoughtfully study and diagnose

* President's address at the twenty-ninth meeting of the Mississippi Valley Medical Association at Memphis, Tenn., October, 1903.

his case is, after all, a negative quantity, with more incorrect than correct conclusions. Such a man, after years of so-called practice, is really worse off than when he began.

If you have acquired a "slip-shod" method of investigation; if you are careless in your observations of the symptoms and phenomena of disease; and, finally, if you make no diagnosis at all, or you are satisfied with "biliousness" or vague, meaningless diagnosis; in other words, if you do not try at least to make a scientific study of your work, let me exhort you to turn back before it is too late, for you are on the high road to medical imbecility.

A good preliminary training is a great aid, and fortunate is the man who is early brought under the influence of some thoughtful, studious clinician and is drilled in all methods of research. Those who have not had the necessary instruction must learn it either by careful study in their practice or by post-graduate work. The latter is absolutely necessary to healthy progress. No man can to-day long hold his place in the esteem of his patients who does not use modern methods of investigation.

The usual tests for the urine are familiar to all, and in every case of serious, protracted or obscure disease, they should be made. It is my rule to ask patients if such tests have been made by their physician, and the reply has been negative in a large majority. This was true also of a very large proportion of those whose diseases were in the urinary tract. There is no defense for such negligence.

The examination of the blood, sputum, gastric contents, etc., requires some time and preparation, which the practitioner must give or avail himself of the help of some one who will devote his time to this work. Those living in cities have no trouble. Those in smaller towns could easily arrange to have these examinations made in a neighboring city. I believe, however, every practitioner should be prepared to make most of these tests. He could not spend a more delightful or profitable vacation than to take a post-graduate course and master the necessary technic.

The true physician must devote his whole life to the study of his profession. He must avail himself of instruction from competent teachers. He must, by reading, keep in touch with the advance thoughts of his confrères; but, after all, his real progress will depend on his study of phenomena of disease in his patients themselves.

To do this properly he must follow some systematic method. He must accurately determine symptoms and physical signs, then by them locate the lesion; then determine what is the lesion. First, what are the symptoms? Second, where is the lesion? Third, what is the lesion? After that what other morbid conditions, if any, coexist? The symptoms and physical signs form the basis of reasoning, and must be studied with precision. Is the heart enlarged, or is it not; is there a murmur, and if so, what is its character and relation to the sounds of the heart?

In cases of injury, determine the exact physical signs, and carefully note all changes in function, availing yourself of every method of examination. When you have done this, you are then to determine the location of the lesion. This is a process of deduction from the observed facts, in the light of our knowledge of anatomy and physiology.

After we have determined the organ disease, we must by our knowledge of pathology ascertain what the lesion is. A puerperal patient falls ill; she has rigors and fever; she has pain and pelvic tenderness. No matter how slight these symptoms are, that patient is infected. Do not call it milk fever nor malaria (unless you demonstrate the plasmodia in the blood) for it is sepsis, and you must at once determine where it is. Is it an infected laceration of the perineum, vagina or cervix? Is it in the endometrium, or is it in the tubes or ovaries, or a localized peritonitis, or is it a general systemic infection? Lastly, what germ or germs are the cause of the trouble? On the correct answer of these questions your treatment must depend.

Most cases of grave illness will present more than one pathologic change, and a large proportion will have several, often entirely independent of each other. Do not fall into the habit of finding one disease and attributing every symptom to it. One may at the same time have a decayed tooth and an ingrowing toe-nail, yet they are entirely independent of each other. There was a time when the magic word "reflex" soothed the mind of the clinician, and lifted him over difficult obstacles into the broad, easy road of stupid error. Trace every symptom down to its cause if you can. If you cannot, you must regard your diagnosis as incomplete, and look out for more light, which may come after a period of watching.

This brings me to one more point too often overlooked. In cases of any obscurity more than one examination is necessary, and we should insist on sufficient time for repeated and continuous observations before making a positive diagnosis. It is a notorious fact that patients often visit a number of eminent consultants, obtaining a different opinion from each. One patient of mine had visited three of the best diagnosticians in this country, and received three different diagnoses, none of which proved correct. Each had given his opinion after two or three office examinations. Had the patient been under the care of either of them, or a good general practitioner, and careful records of all symptoms kept by a trained assistant, the correct diagnosis would have been made after a few days of observation.

After all our care, study and thought, we will fail only too frequently to reach a conclusion which satisfies us, even after we have exhausted our own knowledge and have availed ourselves of the skill of our colleagues who have gone deeper into special branches. Every earnest worker yearns for more light to clear up the darkness and uncertainty in many cases.

Besides, it is so difficult to keep constantly in mind all we know, and we are often led astray, even overlooking almost self-evident conditions. How often we are humiliated by our failure to recognize a disease whose clinical picture was complete. I thought it might not be out of place to call to mind a few of the errors which in my experience are most frequently made.

When your patient is a woman of child-bearing age, no matter what the social condition may be, nor what symptoms she presents, do not forget to exclude pregnancy. I do not believe there is a physician of any large experience who has not had one or more cases in which his failure to consider this possibility has caused him to blunder. One of the most competent gynecologists in this country told me that he cut down on a normal pregnancy in the seventh month. So disgusted was he with his stupidity, he packed his trunk and went to Europe. He felt disgraced; he seriously questioned his ability and right to practice. The first clinic he visited was that of

one of the most renowned, continental abdominal surgeons. The first operation was a section in a normal pregnancy. Careful examination with the possibility in mind will make these errors rare. Pregnancy co-existing with a tumor or other lesion may be difficult to diagnose, but here too, with due care it can generally be made out.

Extra-uterine pregnancy is another condition still too often unrecognized. This is especially unfortunate since generally the error means the loss of a precious life, which could be saved by prompt action. In a typical case there is no excuse for a mistake. A woman after some years of sterility misses a period. In four to eight weeks an irregular flow appears, usually not profuse. There is discomfort and pain. Suddenly she is seized with an agonizing pain in the abdomen, followed soon by symptoms of shock and collapse. Her pale and anxious face, rapid pulse and sighing respiration, point to internal hemorrhage. Such symptoms warrant a diagnosis, and an operation should be done at once.

It is very necessary to carefully interrogate all severe and serious lung diseases. When confronted by a case of cough with expectoration, emaciation and septic symptoms, we must not pronounce it one of hopeless tuberculosis without absolute demonstration.

Abscesses of the lung, due to infection other than tubercle, if they can be located, can be promptly relieved by surgical interference. These abscesses are more frequently due to the *Streptococcus pyogenes*, or the staphylococcus, less often the pneumococcus or the typhoid bacillus. While the lung may be the primary seat of infection, it is more frequently secondary to septic process elsewhere, that is in pyemia, or puerperal or other septic infection, or purulent osteomyelitis, or ulcerative endocarditis.

Abscess of the lung has, in my experience, more frequently followed puerperal infection, and in every case the same germ was found in the uterus and the lung. The symptoms are the same as infection elsewhere, chills, fever, etc., with cough and copious expectoration, which is purulent and foul smelling. The examination of the sputum will show absence of the *Bacillus tuberculosis*. The physical signs are those of a cavity. In other words, if you find an infected lung presenting a large single cavity, which can be located by physical examination, and tubercle is excluded, you have a case which demands surgical interference. I have had the good fortune to meet with a number of these cases, and the results have been most gratifying.

The early recognition of tubercular disease is a matter of great importance to the patient, but it is often unsuspected until far advanced, when it coexists with other troubles. Women who apply to the physician for treatment for pelvic disease are very often victims of tuberculous infection in some part of the body, and the local lesion, which is often trivial, engrosses the physician's attention, while the serious disease is neglected. I have frequently been called to operate for laceration of the cervix or perineum, or displacement of the uterus in a patient who was well advanced in tuberculosis. These sufferers have usually been told that all the trouble was reflex, and that a repair of the local lesion would effect a cure.

It seems to me this error is most common in those affected with tuberculous kidney. I do not think the general practitioner appreciates the frequency of this disease. Since I have given this subject some attention I have been surprised at the number of cases I have found. The patient usually gives a history of loss of health and strength; they are "run down." There is polyuria, and often the first symptom is hematuria, which may be slight, or so large in amount that the patient is almost exsanguinated. There is pain, usually an aching in the loin, and at times severe nephritic colic is in evidence. Hectic phenomena come later. Examination reveals an enlarged and sensitive kidney. The urine is abundant, of low specific gravity, and in it are found fat globules, red corpuscles, shrunken renal epithelium, and some pus. The tubercular bacilli are by no means always to be seen, but by repeated observations they could be demonstrated in most of the cases I have studied.

I cannot leave this part of my subject without at least calling to mind the necessity of early diagnosis of malignant disease. This has been so often and so ably done it seems almost superfluous to mention it. But, alas! we are still meeting patients so far advanced in cancerous disease that nothing can help them, and who have been assured that they have been suffering with the usual troubles of the menopause, or that the lump in the breast was of no consequence, or that their indigestion was due to some trivial disease.

Any irregularity of the flow at the menopause, or any unusual discharge should be carefully investigated. A flow of blood from the uterus after the menopause is more frequently due to cancer than to anything else.

All tumors of the breast are suspicious; 80 per cent. are malignant. If in doubt, either remove a piece for examination, or generally it is better to make a radical operation at once. Malignant disease of the stomach can be successfully attacked only in the earliest stages. If we wait until there is a tumor, and all symptoms are pronounced, it is too late.

Patients having persistent grave gastric disturbances which resist medical treatment, should be subjected to an exploratory celiotomy.

Once more let me return to the one idea I want to express. Healthy progress in the science of medicine comes only from careful clinical study. Your patients are the objects of your study, and books and teachers can only aid you in your methods; the real work you must do for yourself.

I know some of you are saying all this is well enough in an address, and good enough to tell students, but it is not practical; that it is the dream of an idealist who would be rudely awakened by actual hard practice. Not so; these thoughts have been driven into me by a hard general practice. I know full well the difficulties, discouragements and failures, but still maintain that systematic advance can be made even by the busiest physician.

Do you say you have not the time? The average physician loses enough time by careless, "slip-shod" methods to master any branch of medicine. Do not deal with gossip or small talk, or "gabble" with idle men and women. Do not make long visits; take only such time as is absolutely necessary; do not make a nurse of yourself. Do not imagine it is necessary to degrade yourself for popularity; you will only be cheapened in the estimation of your patrons. Do not trade horses, or run a farm, for such are the thieves of your time. Investments of any kind which take your time from your profession will make you the loser in the end. In other words, if you want to practice medicine you must give your time to it to the exclusion of all else.

I purposely avoid details because each must fit his study to his condition. Do not go stargazing and at-

tempt something entirely unfitted to your sphere. A method suitable to the student in the laboratory or a clinician in a large hospital would not be the one for the practitioner of the crossroads. Each must fit his methods to his needs. The practitioner remote from large centers must evolve his own system. He must have help; if his practice is large, an assistant or competent nurse should be obtained. It is my belief that in the near future the trained nurse will become in fact a clinical assistant, relieving the busy doctor of many details, as testing urine, stomach contents, and other minor manipulations. Even he who is so remote as to be denied these aids can generally find those in the community who can be taught to take much of the drudgery. Learn to save time and apply it to the essentials, leaving the details to others.

Original Articles.

THE INFLUENCE OF RESECTION OF THE CERVICAL SYMPATHETIC GANGLIA IN GLAUCOMA.*

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This paper does not pretend to be a treatise on the subject mentioned in the title, nor does it assume to give any positive conclusions as to the value of the operation of sympathectomy in glaucoma; for it may be said at the outset that, despite the study of almost all the literature on the subject in its preparation and the collection of published and unpublished data in this country, I feel that positive conclusions are not yet to be reached, and I can only offer this as a contribution that may possibly aid in future work.

I wish at first to express my sincere thanks to the ophthalmologists of the country who so generously responded to the letter asking for data concerning cases of excision of the sympathetic ganglia for glaucoma, and for the latest possible reports of the condition of such cases.

In this way it has been possible to secure records of almost all the cases of glaucoma treated by this means in this country. In several instances the reports seem so favorable that one is tempted to draw general conclusions, while in others the data are so meager or the time that has elapsed since the operation is so short that positive deductions are unwarrantable. Such reports would be more valuable if in every instance careful clinical records had been kept, together with charts of the visual fields. Nothing is more important in the study of chronic glaucoma than the condition of the peripheral vision, and such record in a number of these cases is lacking.

I desire, first, to present a detailed report of seven cases of sympathectomy for glaucoma in my own practice which are still under observation, two of which are rather recent. I shall then give an abstract of the records of cases of sympathectomy for glaucoma that have been done in this country, as they were furnished to me by the observers in answer to the circular letter sent out this spring. Many of these cases have already been published, but the observers have kindly sent me the latest possible report on the condition:

CASE 1.—Chronic inflammatory glaucoma—right eye. Sympathectomy (no benefit). Iridectomy (improvement).

Felix H., aged 40 years. Entered Illinois Eye and Ear Infirmary April 29, 1901. Family history negative, and no previous history of eye trouble until April, 1898, when he lost the sight of the left eye by having it struck with a piece of hot brass. He could see shadows with it until one year before admission. Some three weeks after the injury to the left eye, the right became inflamed, and he states that he was unable to see with it for two or three weeks, and then he recovered vision. In the last two months he has noticed failure of vision, with occasional pain in the right eye. Halos have been noticed around a light. On admission R. E. V.= 20/50 with Cyl.+1.50, 180°, slight improvement. Conjunctiva of right eye injected and there is engorgement of the ciliary vessels. Pupil moderately dilated and vertically oblong. Responds to light. T.+. Optic disc distinctly excavated, but no pulsation of the vessels. L. E. V.=0. Conjunctiva injected; pupil dilated, cataract. T.+1. No perception of light. Fundus not visible. Eserin, grains ii-3i, was used three times daily, and the pupil became somewhat smaller and the tension less. For visual fields see Figure 1, which shows marked contraction in all meridians.

May 16, 1901, R. V.=20/70 with Cyl.+1.50, 180°, through stenopaic slit 20/50. Severe pain last night. A. c. shallow. T. +1. Pupil dilated 5 mm. In the afternoon of this day, under chloroform narcosis, Dr. F. C. Schaefer removed the right superior cervical sympathetic ganglion. Contraction of the pupil immediately followed, but tension was not lowered until several hours after the operation. At the time of the operation there was neither pallor nor flushing of the face, nor was there an increase of lachrymal secretion. Ptosis of right side was noticed after recovery of consciousness.

May 17, 1901. Patient comfortable, right pupil contracted. T. lower than before, but still +.

May 18, 1901. Considerable headache. Pupil contracted. T.+.

May 20, 1901. Considerable pain in wound and head. T. slightly +. R. V. =20/40.

There was some infection of the wound, but by June 7 it had completely healed and patient had no more pain and also no headache. The slight improvement in central vision continued at 20/40 and the tension was only slightly increased. The fields, however, showed no improvement.

June 13, 1901. Vision fell to 20/70, with an increase of tension. This was not controlled by eserin.

June 20, 1901. Tension has been elevated for one week and there has been occasional pain in the eye. Large iridectomy done upward.

June 22, 1901. Very slight reaction from iridectomy.

July 2, 1901. R. V.=20/100. Tension normal. No pain. Central vision began to improve, but occasionally there was slight pain in the eye and slightly increased tension.

From Aug. 2, 1901, to date of his discharge, Aug. 29, 1901, the tension remained normal and the eye was quiet. R. V. with Cyl.+1.00. Ax. 20°=20/30+. Visual fields were unchanged. See Figure 3.

CASE 2.—Chronic inflammatory glaucoma. Both eyes. Rt., sympathectomy (marked temporary improvement). Iridectomy.

Edw. L. V., aged 62 years, entered Illinois Eye and Ear Infirmary June 29, 1901. No history of previous eye disease. History of rheumatism. Father became blind at the age of 70 years. Examination of urine shows nothing abnormal. About five years before patient noticed he would occasionally see rings of color around a light, but it was not until six months before admission that he commenced to have pain in his eyes, which he describes as dull, persistent and centering over the left eye. He has noticed a gradual failure of vision, and at different times a complete loss of vision in different fields. There is a history of an acute exacerbation three weeks

* Author's abstract of a paper read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. J. A. Lippincott, Frank Allport and John E. Weeks. The full paper appears in the Transactions of the Section, 1902.

ago, since which time he has had more trouble. Patient hyperopic. R. E. V. with Sph.+5.00=20/100+1.

Cornea clear, not anesthetic. A. c. shallow. Some circumcorneal injection. Pupil not dilated, responds feebly to light. T.+. Lens slightly cloudy. Disc deeply cupped with glaucoma halo.

L. E. V. with Sph.+5.00 = Fingers at 5 feet in temporal field. Pupil normal in size. T.+. Some opacity of crystalline lens.

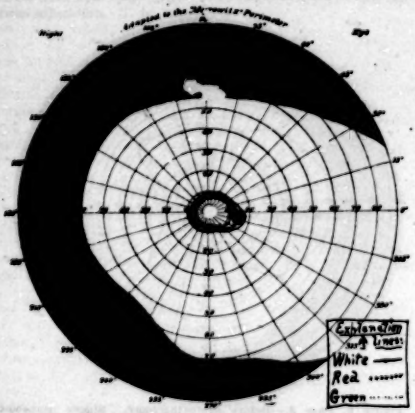

Figure 1, Case 1.—Felix H., aged 40. Before sympathectomy. Chronic inflammatory glaucoma. April 29, 1901. Rt. eye V=20/50. T.+. Good illum. obj. 1 cm. sq.

Disc deeply cupped. For fields of right eye see Figure 4. It was impossible to chart the field of vision of the left eye. Eserin, grains ii-ʒi, t. i. d., was used in each eye.

Operation July 12, 1901. Under ether narcosis the right superior cervical sympathetic ganglion was removed by Dr. F.

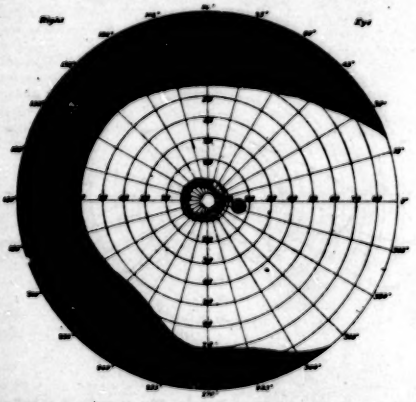

Figure 3, Case 1.—Five weeks after iridectomy. Chronic inflammatory glaucoma. Aug. 29, 1901. Rt. eye V=20/30+. T. n.

C. Schaefer. The operation was successfully and easily performed and the patient bore it well. Soon after the operation it was noticed that the right pupil was contracted, there was ptosis and the tension was about normal.

July 16, 1901. R. V. with Sph.+5.00=20/50. Pupil small. T.+:

July 17, 1901. R. V. with Sph.+5=20/70. Pupil small. T.+. Wound in the neck healed by first intention and patient experienced no ill effects from it. Vision began to improve, although tension remained slightly increased.

July 30, 1901. R. V. with Sph.+5.00=20/40+. Fields increased (Fig. 5). Tension is also nearer normal.

Aug. 8, 1901. R. V. with Sph.+5.00=20/30. Tension normal. Field (Fig. 6).

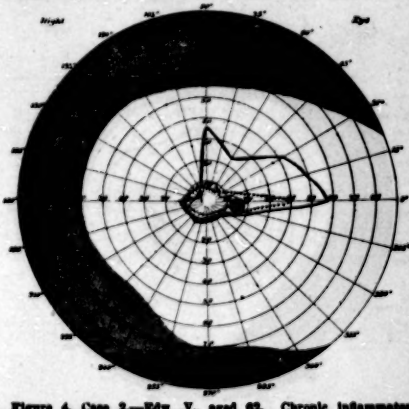

Figure 4, Case 2.—Edw. V., aged 62. Chronic inflammatory glaucoma. June 29, 1901. Rt. eye V=20/100. T.+. Obj. 1 cm. sq.

Aug. 31, 1901. He left the hospital against my advice. T. n. R. V.=20/30. Field as above.

Oct. 26, 1901. Readmitted to the hospital. R. V. with glass =20/70. L. V. with glass=Fingers 6 in. Tension of right eye decidedly plus. The impairment of central vision is probably due to increasing cloudiness of the central portion of lens. The left lens was much more opaque than when he left the

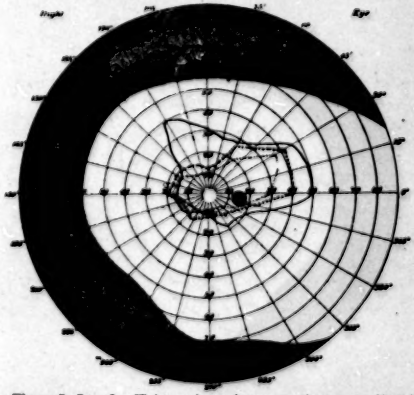

Figure 5, Case 2.—Eighteen days after sympathectomy. Chronic inflammatory glaucoma. July 30, 1901. Rt. eye V=20/40+. T. n. Obj. 1 cm. sq.

house in August. The visual fields of the right eye had become markedly contracted, as seen in Figure 7. As the tension remained high I did an iridectomy on the right eye Nov. 14, 1901, followed one week later by an iridectomy of the left eye. Although the operation was easily performed and without accident or complication, it had the effect of causing

the opacity of the lens to increase more rapidly. The tension returned to normal and patient left the hospital Dec. 6, 1901. R. V.=15/200. L. V.=shadows. He promised to return as soon as the cataract in the right eye made him helpless, but although I have endeavored to find him, I have not seen him since.

CASE 3.—Simple glaucoma, both eyes. Left sympathectomy, without benefit. Left iridectomy, with questionable benefit.

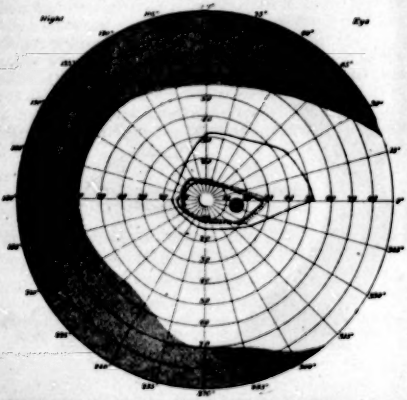

Figure 6, Case 2.—One month after sympathectomy. Chronic inflammatory glaucoma. Aug. 8, 1901. Rt. eye V=20/30. T. n. Obj. 1 cm. sq.

Dr. John H., aged 46 years, consulted me Nov. 15, 1901, referred by Dr. A. E. Prince, Springfield, Ill. General health good. At the age of 20 he had granulated eyelids, from which he suffered for two years, recovering completely. No trouble of eyes since that time until January, 1901, when his eyesight began to grow dim, and he would occasionally see halos around a light with the left eye. These attacks of dimness of vision, during which he seemed to be looking through a "fog or haze," came on at intervals of five or six days, and lasted several hours. There was no pain, redness or tenderness of the eyes during these attacks or during the intervals. He noticed that his sight was usually clearer in the morning than in the afternoon. Four weeks before coming to me he consulted Dr. Thompson of Indianapolis, who pronounced his case glaucoma and prescribed eserin, which he was using at the time. Condition at time of first examination, Nov. 15, 1901: R. V. with Sph.+2.00⁀Cyl.—3.50, 180°=20/200. L. V. with Sph. +4.00⁀Cyl.+3.00 75°=20/200. He was wearing such lenses constantly. Both pupils small and somewhat irregular and do not respond to light. Tension of each +1.

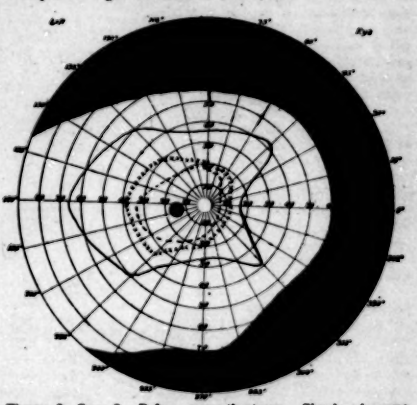

Figure 9, Case 3.—Before sympathectomy. Simple glaucoma. Nov. 16, 1901. Left eye V=20/200. T.+1. Obj. 1 cm. sq.

On discontinuing the use of the eserin for one day the pupils dilated moderately so that the fundus could be seen clearly. There was a deep glaucomatous excavation in each disc. The fields (Fig. 9), taken Nov. 16, 1901, showed marked contraction in the nasal region, that of the right noticeably so. The anterior chamber was about of normal depth. After discussing the question of operation with the patient it was decided to do a sympathectomy on the left side. Nov. 20, 1901, the left superior cervical sympathetic ganglion was excised by Dr. Schaefer at the Post-Graduate Hospital under chloroform narcosis. The operation was successfully performed. Immediately after the operation the left pupil, which had been without eserin for two days and was mod-

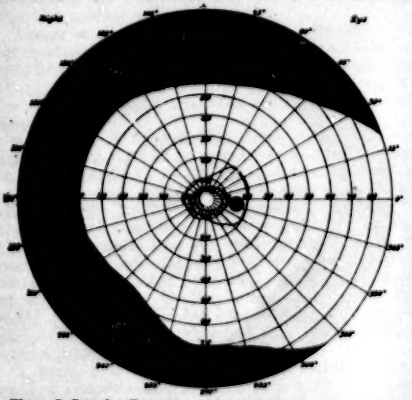

Figure 7, Case 2.—Fourteen weeks after sympathectomy. Chronic inflammatory glaucoma. Oct. 26, 1901. Rt. eye V=20/70. T.+1. Obj. 1 cm. sq.

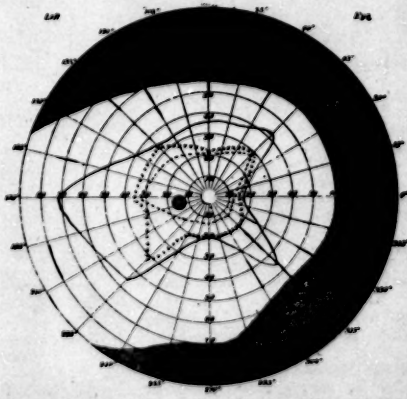

Figure 10, Case 3.—Five weeks after sympathectomy. Simple glaucoma. Dec. 30, 1901. Left eye V=20/200. T. n. Obj. 1 cm. sq.

erately dilated, contracted, and the tension became normal. The patient recovered nicely from the operation, but had some sensitiveness of the left side of the neck and face and inability to raise the left arm and shoulder. He was also quite hoarse, and this symptom persisted.

Dec. 1, 1901. L. V. with Sph.+4.00⌒Cyl.+3.00 75°=20/200. T. n., pupil small, ptosis of left. Fields show no increase. R. V. with Sph.+2.00⌒Cyl.—3.50, 180°=20/200. Pupil small from pilocarpin. T. n., sometimes +.

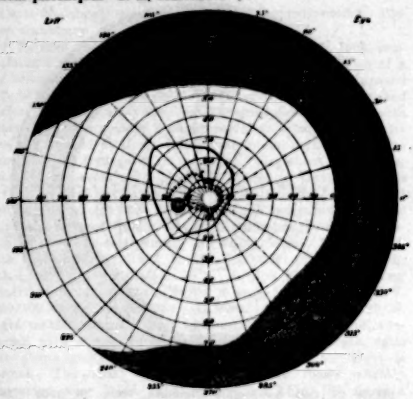

Figure 11, Case 3.—Three months after sympathectomy. Simple glaucoma. Feb. 12, 1902. Left eye V=8/200. T.+. Obj. 1 cm. sq.

Dec. 30, 1901. Condition same as on December 1. Color fields slightly enlarged (Fig. 10). He left the city with instructions to continue the miotic and to report at once if his sight began to get worse.

Feb. 12, 1902. Patient returned with the statement that his sight was failing. R. V. with glass=10/200. L. V. with

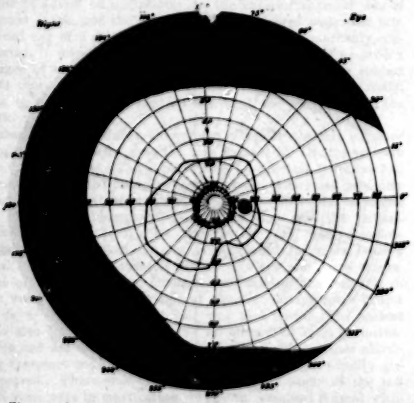

Figure 12, Case 4.—Christian K., aged 74. Simple glaucoma. Oct. 7, 1902. Rt. eye V=20/70. T.+. Obj. 1 cm. sq.

glass=8/200. Pupils moderately contracted. T.+. Fields of left contracted, as shown in Figure 11.

Feb. 14, 1902. Broad iridectomy upward in left eye. The eye made a good recovery from the operation.

Feb. 24, 1902. R. V. with glass=15/200. T. n. L. V. with glass=6/200. T.—. Patient is somewhat hoarse and has imperfect power of the left shoulder. He left Chicago for his home in southern Illinois. He continued the use of pilocarpin, grs. ii-℥i.

A letter from him written April 19, 1903, tells me that he has R. V. with glass=13/200. L. V. with glass=9/200. The left vision, however, seems to be somewhat brighter than the right. He says the fields are limited upward and downward, but fairly good to the temporal side. The tension in each eye is plus, that of the right being a little higher than the left.

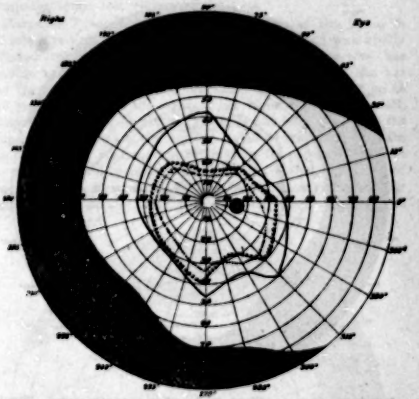

Figure 13, Case 4.—After 1 week of eserin. Simple glaucoma. Oct. 15, 1902. Rt. eye V= 20/40. T. n. Obj. 1 cm. sq.

He says he never has the least pain or trouble in any way in the eyes and his condition is such that he "can get around with comparative comfort," and attend to his duties as postmaster, a position he obtained after giving up his practice. His voice is hoarse and weak, and his neck in front of the scar is sensitive.

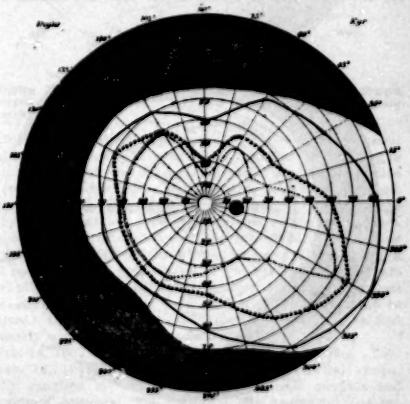

Figure 14, Case 4.—Two weeks after sympathectomy. Simple glaucoma. Nov. 5, 1902. Rt. eye V=20/40. T. n. Obj. 1 cm. sq.

CASE 4.—Right, simple glaucoma. Left, absolute glaucoma. Right, sympathectomy (improvement).

Christian K., aged 74, admitted to Illinois Eye and Ear Infirmary Oct. 3, 1902. One year before, he had severe pain in the left eye, which lasted two weeks, and which was pronounced neuralgia by one physician who saw him, and another said his impaired vision was due to a developing cataract.

Halos were noticed around a light and the eye was considerably reddened. The sight was very imperfect after this period of painfulness, but the eye quieted down. Eight months later he had a most severe attack of pain in the left eye, which lasted two or three hours, after which he discovered that the eye was completely blind. This attack was pronounced neuralgia by the physician who saw him after it was over. Soon after this experience he noticed a fogginess of the vision of the right eye, more marked at times than at others. Halos were occasionally seen around lights, but he had very little or no pain in the eye. He is a strong, healthy man with no history of previous disease. Urine normal.

On admission R. V.=20/70. Emmetropia. L. V.=0. Right eye T.+(?). A. c. of normal depth, pupil not dilated, and responds to light and acc. Optic disc not markedly cupped, but of a grayish unhealthy appearance with indistinct margin, such as is seen in incipient glaucoma.

Left eye, T.+3. Marked pericorneal injection. Pupil moderately dilated and shows a greenish reflex. Fundus invisible. Diagnosis: right, simple glaucoma; left, absolute glaucoma.

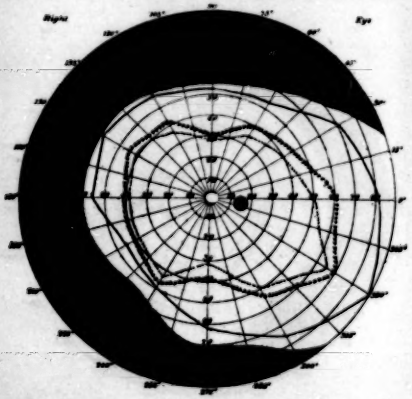

Figure 15, Case 4.—Eight weeks after sympathectomy. Simple glaucoma. Dec. 17, 1902. Rt. eye V=20/40+2. T. n. Obj. 1 cm. sq.

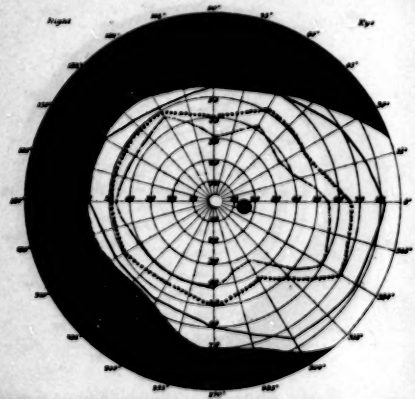

Figure 16, Case 4.—Six months after sympathectomy. Simple glaucoma. April 20, 1903. Rt. eye V=20/40+. T. n. Obj. 1 cm. sq.

Eserin, grain 1-32, twice daily for each eye. The first chart of visual fields taken a few days after his admission is seen in Figure 12. This was not taken by myself, and may be somewhat inaccurate, for the next field, Figure 13, taken on Oct. 15, 1902, after several days' use of eserin, shows a considerably increased field; but as the central vision had improved to 20/40 from 20/70, and the tension had become normal after the use of the miotic, the improvement in the fields may probably be ascribed to the treatment. All the other fields were taken carefully by myself.

Oct. 20, 1902. Excision of the right superior cervical sympathetic ganglion was made by Dr. F. C. Schaefer, without any difficulty. Pupil became small immediately after the operation and tension became reduced. Ptosis followed, but there was no pain about the face or neck and no congestion of the conjunctiva or skin. Patient made an excellent recovery from the operation with no unfavorable symptoms. Slight ptosis of the right eye was noticed.

Oct. 28, 1902. Pupil contracted. T. n. R. V.=20/40.

Nov. 5, 1902. Fields show a remarkable improvement. (See Fig. 14.) R. V. 20/40. T. n.

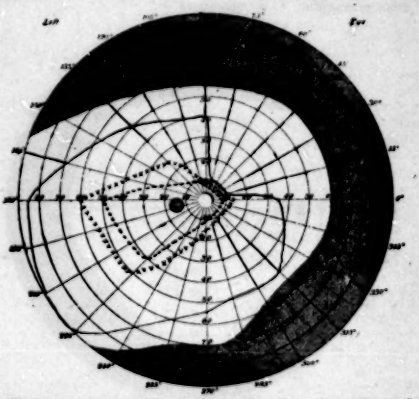

Figure 18, Case 5.—Simple Glaucoma. Nov. 13, 1902. Left eye V=20/30. T.+. Obj. 1 cm. sq.

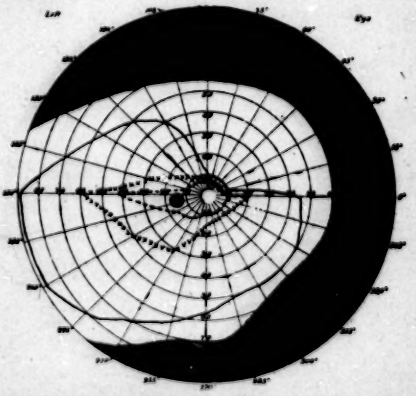

Figure 20, Case 5.—Twelve days after sympathectomy. Simple glaucoma. Dec. 18, 1902. Left eye V=20/30—2. T. n. Good illum. Obj. 1 cm. sq.

Dec. 17, 1902. Improvement continues. Fields almost normal (Fig. 15). R. V.=20/40+2. Patient still has some pain in right side of face and jaw, as well as the right auricle.

Jan. 14, 1903. Left the hospital to-day. R. V.=20/40+2. T. n. Pupil contracted. Field same as above.

April 18, 1903. Readmitted. In left eye there has been severe inflammation and ulceration of the cornea, which began two or three weeks ago. R. V.=20/40+. Pupil still contracted and T. n. Fields normal (Fig. 16). It will probably be necessary to enucleate the left eye.

CASE 5.—Simple glaucoma left eye. Sympathectomy. Disease stationary.

J. S., aged 76 years. First consulted me Nov. 12, 1902, complaining that for weeks previously he had the sensation of a fog being over the left eye. He had also noticed halos around a light at night. This phenomenon of colored rings he had noticed at times for years, but he remembered that at such times there was usually a slight secretion from the lids. He also experienced at times a dull pain in the left eye, and the same but less frequently in the right. He stated that at one time he had severe neuralgic pains extending from the bridge of the nose backward around the left orbit to the ear. General health good, except that he had at times indistinct rheumatic pains and suffered from a bladder disturbance, probably on account of prostatic enlargement. He wears glasses. R. Sph.+1.50 with Cyl.+1.00, Ax. 15°. L. Sph.+1.75 for distance, and R. Sph.+5.00⌒Cyl.+1.00, Ax. 15°. L. Sph.+5.00 for reading prescribed by an ophthalmologist a year or so before. R. V. =20/100 with glass, 20/30+. L. V.=25/70 with glass, 20/30. Right tension normal. Left tension slightly plus, pupil contracted with miotic, anterior chamber of normal depth, optic disc shows glaucomatous excavation, that of the right is normal. The chart of the right fields shows slightly contracted color fields. That of the left (Fig. 18) shows a scotoma in the upper nasal quadrant. Pilocarpin, grs. ii-ʒi, t. i. d., was ordered.

Dec. 1, 1902. Tension has remained about the same as before under the use of pilocarpin. Pupil remains small and anterior chamber of good depth. L. V. with glass=20/30. Left fields show somewhat more contraction in the upper nasal quadrant.

Dec. 2, 1902. At a consultation with Dr. Hotz it was decided to advise an operation. As the anterior chamber was of normal depth, and the fields have not improved under the continued use of a miotic, although the pupil was markedly contracted, it was thought that sympathectomy offered as good a chance of checking the glaucoma as iridectomy. The subject was thoroughly discussed with the patient and his family, and it was finally decided to try first the operation on the neck.

Dec. 6, 1902. Under chloroform narcosis the left superior cervical sympathetic ganglion was excised by Dr. Schaefer in the usual manner. The pupil, which for the last few days had recovered from the influence of the miotic, contracted promptly after the removal of the ganglion. There were no accidents or difficulties accompanying the operation and the patient recovered well from the anesthetic. He had complete aphonia, and marked hoarseness continued for more than a week. There was suffusion of the left eye and some congestion of the conjunctiva, mucous membrane of the left side of the nose and skin of left side of the face lasting for a couple of days. Ptosis of the left side was also noted. The patient was also confused mentally and at times had mild hallucinations and did not remember where he was. This rather alarming symptom continued for about one week, and gradually disappeared. There was tenderness about the angle of the jaw and some pain in masticating. Tension remained normal without miotic. Wound healed by first intention.

Dec. 18, 1902. Hoarseness has disappeared. Ptosis. General condition good. L. V. with glass=20/20—2. T. n. Field not markedly changed except that it seemed slightly increased in the upper nasal quadrant for white, and slightly decreased for green in the lower temporal area (Fig. 20).

The patient went to his home in an adjoining state soon after this date, with instructions to use pilocarpin regularly.

Jan. 21, 1903. Reported to me again on this date. Refraction has changed somewhat, for now he sees best with Sph.+1.25 Cyl.+0.50, 180°, which gives him L. V.=20/30. Pupil small. Tension slightly plus. Field was taken in a poor light as compared with the others, and shows more contraction, especially for colors, and a notch appears in the upper temporal field (Fig. 21). He still has some pain at corner of left jaw when he eats. Slight ptosis.

CASE 6.—Simple glaucoma, left. Absolute glaucoma, right. Sympathectomy, left (improvement).

Margaret T., aged 78, entered the service of Dr. Beard in Illinois Eye and Ear Infirmary Jan. 25, 1903, and was kindly referred to me. Strong, well-preserved woman, who has usually had good health, except that since childhood she has had frequent attacks of sick headache, which continued up to two years ago, when the sight of her right eye began to fail, followed soon after by failing vision of the left. Early in the course of the disease she noticed halos around a light. On admission, R. V.=perception of light in temporal field. T.+. A. c. of normal depth, pupil slightly dilated, spicules of opacity in the periphery of the lens. Optic disc sharply cupped, with atrophy and glaucomatous halo. L. V.=8/200

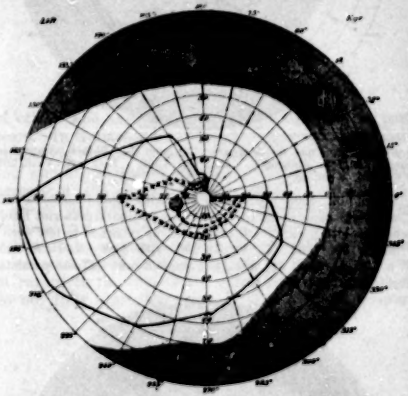

Figure 21, Case 5.—Six weeks after sympathectomy. Simple glaucoma. Jan. 21, 1903. Left eye V=20/30. T.+ (?). Poor illum. Obj. 1 cm. sq.

with Sph.+3.50, slight improvement. T.+. A. c. of normal depth, pupil slightly dilated, faint spicules of opacity in periphery of lens; well marked, but rather shallow excavation of optic disc with halo. Retinal veins somewhat engorged. Disc rather pale. No pulsation of arteries or veins. Patient is hyperopic and has been wearing Sph.+3.25 for distance. She has marked arteriosclerosis, the superficial arteries being very hard. Urinalysis shows specific gravity 1024 albumin and no casts. The visual fields of the left eye (Fig. 22) are markedly contracted, especially the color fields, and the nasal side is almost obliterated. Fields of right eye could not be charted. Under eserin and pilocarpin the tension was reduced to nearly normal and the pupils contracted.

Feb. 14, 1903. Left pupil considerably dilated 5 mm. T.+.

Feb. 16, 1903. Excision of left superior cervical sympathetic ganglion by Dr. A. E. Halstead under morphia and chloroform narcosis. The operation was uneventful and immediately after the removal of the ganglion the left pupil contracted.

Feb. 17, 1903. T. n., slight ptosis left, pupil contracted. Has headache and is hoarse.

Feb. 19, 1903. Pupil again somewhat dilated, but not so much as before the operation. It was suspected that two days before the operation some atropin had been put into the eye accidentally by the use of an atropin dropper when the eserin

was being instilled and that this accounted for the sudden mydriasis. Immediately after the operation the pupil contracted for 24 hours, then dilated for a few days, and then again contracted and remained so. Headache persists and there is anesthesia of the left auricle.

Feb. 26, 1903. Ptosis of left. Pupil ½ mm. smaller than the right. T. n. L. V.=13/200.

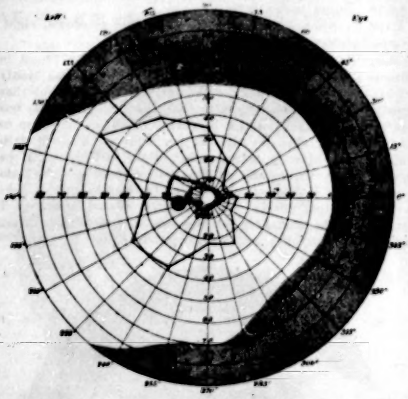

Figure 22, Case 6.—Margaret T., aged 78. Before sympathectomy. Simple glaucoma. Jan. 30, 1903. Left eye V=8/200. T.+. Obj. 1 cm. sq.

March 10, 1903. L. V.=13/200 with Sph.+3.50=20/200. T. n. Pupil remains smaller than right. Hoarseness and headache have disappeared and sensation has returned to left ear.

March 30, 1903. L. V.=18/200 with Sph.+3.50=20/120. T. n. Right pupil 3½ mm., left pupil 3 mm. Ptosis persists. Fields improved (Fig. 23).

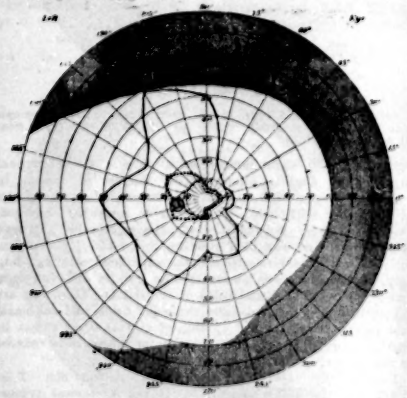

Figure 23, Case 6.—Six weeks after sympathectomy. Simple glaucoma. March 30, 1903. Left eye V=20/200. T. n. Obj. 1 cm. sq.

April 15, 1903. Left hospital with instructions to use pilocarpin and to return at once if vision begins to fail.

June 1, 1903. Readmitted to hospital. L. V. with Sph. +3.50=20/200. T. n. Left pupil smaller than right. Fields about the same as in Figure 23.

CASE 7.—Simple glaucoma, left; simple absolute glaucoma, right. Left sympathectomy (without benefit). Left iridectomy, complicated with intraocular hemorrhage. Loss of sight.

Chas. F. D., aged 57, was admitted to the Illinois Eye and Ear Infirmary Feb. 10, 1903, where he was assigned to the service of Dr. Chas. H. Beard, who kindly transferred him to my service. Patient usually had good health and excellent sight until two years before, when he first noticed that the

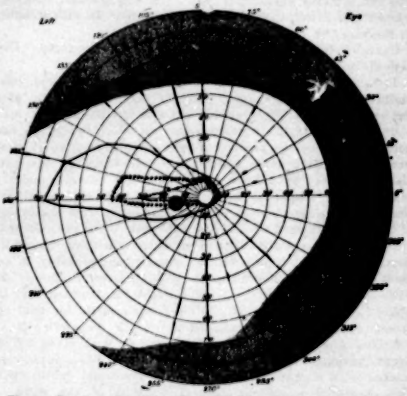

Figure 24, Case 7.—Chas. D., aged 57. Before sympathectomy. Simple glaucoma. Feb. 10, 1903. Left eye V=20/40. T.+ Obj. 1 cm. sq.

vision of the right eye was foggy at times, and he would see halos around a light. The right vision continued to fail, but he had no pain or inflammation in it. Three months before his admission the same trouble began in his left eye, so that he could no longer see well to do the fine work that his occupation, that of bronze sculpture work, required. Three weeks

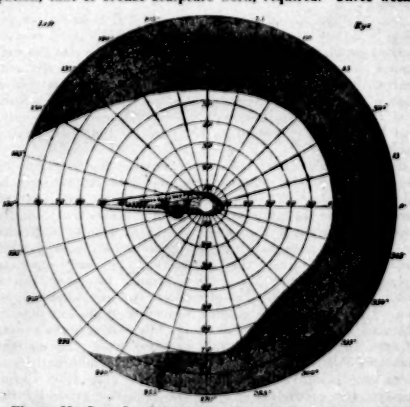

Figure 25, Case 7.—One month after sympathectomy. Simple glaucoma. March 13, 1903. Left eye V=20/40. T.+1. Obj. 1 cm. sq.

before entrance to the hospital he first noticed halos about a light with the left eye. He states that he has had occasional attacks of temporary blindness in both eyes, lasting a few minutes. Urine normal. Arterial tension rather high. R. V. perception of light. T.+. No fields. Media somewhat hazy. Optic disc deeply cupped. L. V.=20/100 with Sph.+1.50= 20/40, pupil responsive to light and moderately dilated, a. c.

normal in depth. T.+. Glaucomatous excavation of optic disc. Fields markedly contracted, only a small temporal field remaining (Fig. 24).

Feb. 16, 1903. Removal of left superior cervical sympathetic ganglion under morphia-chloroform narcosis by Dr. A. E. Halstead. The operation was somewhat difficult on account of the patient's thick neck. The ganglion was very small, but was removed with about 3 cm. of the nerve. Spinal accessory nerve was cut and was afterward united with catgut suture.

Feb. 17, 1903. Patient recovered well from the operation. Pupil is contracted, ptosis marked. Partial anesthesia of left side of face and neck. T.+ as before.

Feb. 26, 1903. L. upper lid droops about 2 mm. more than right. Right pupil 4 mm. L. pupil 2½ mm. L. V. with Sph.+1.50=20/40. T.+. Pain in left side of face and jaw, slight hoarseness and some loss of power in left shoulder. The hyperesthesia of the left side of the face about the jaw and ear was intense, so that he could not bear the slightest touch. Eserin was used regularly.

March 13, 1903. L. V. with Sph.+1.50=20/40. T.+1. Ptosis and miosis persist. Hyperesthesia of the face gradually getting less. Fields much contracted, being reduced to a narrow slit (Fig. 25).

March 17, 1903. Anterior sclerotomy. Slight reduction of tension.

March 21, 1903. Tension again as high as before. Under cocain and holocain anesthesia an iridectomy was done upward. Immediately after completing the corneal incision the wound gaped widely and after a portion of the iris had been excised vitreous began to present in the wound and the patient complained of intolerable pain. After cutting off the portion of extruding vitreous the lens was forced into the wound and had to be removed. Then followed more vitreous and a copious hemorrhage, the patient all the time experiencing great suffering. The bleeding was finally checked and the eye bandaged. The patient was given an opiate and put to bed, and immediately had a severe chill.

March 22, 1903. Patient was fairly well and not suffering much. In the gaping corneal wound was seen a clot of blood and a tissue resembling iris or choroid. There was comparatively little reaction after the operation. The wound became smooth by the separation of the protruding mass and the blood in the anterior chamber was absorbed. At the present time, April 20, 1903, the wound has healed. Eye sensitive to touch. T.—2. V.=0. Sensitiveness of the side of the face has disappeared and the patient has completely regained the power of the arm and shoulder.

The excised ganglia in the last four cases were prepared by Dr. E. V. L. Brown, the pathologist of the Illinois Eye and Ear Infirmary, and were examined by him and also by Dr. Sydney Kuh, professor of diseases of the nervous system at the Post-Graduate Medical School. To these gentlemen I am indebted for the notes on the histologic appearances of the specimens. All the specimens were hardened in 5 per cent. formalin and corrosive acetic solution and stained with toluidin blue and with hematoxylin and eosin.

In all of the specimens there was increased pigmentation of the ganglion cells. In Cases 4 and 5, mast cells were seen. In Cases 4, 5 and 7 it was noted that the cells were not round, but of irregular shapes.

In one case, No. 6, cells slightly vacuolated were observed. In two cases, Nos. 4 and 5, it was noted that the cells showed excentric nuclei, and in the same cases marked vascularity was present. The histologic examination lacks completeness, as, unfortunately, there was not available for control study normal ganglia from individuals of the same age as the patients. As the pigment in the ganglion cells is normally increased in advancing age, it can not be said that these present an abnormality.

(To be continued.)

SOME HISTOLOGIC FACTS THAT CONTRADICT THE GENERALLY ACCEPTED ODONTOBLAST THEORY.*

MICHAEL MORGENSTERN, D.D.S.
STRASSBURG, GERMANY.

While I feel very much honored by your kind invitation, I nevertheless approach my task with some trepidation, because my histologic examinations lead me to conclusions that are considerably at variance with those

Figure 1.

of others who have worked along similar lines in past years. In Germany, I have for the present only a small number of followers, and I fear that the majority of you who are assembled here to-day are also fanatic adherents of the old odontoblast theory; consequently, I assure you that I expect only a moderate amount of applause and approbation at your hands.

But it is in your country precisely that the first voices were raised years ago against the prevailing views in regard to the rôle of the odontoblasts, and while I do not fully share the views of Heizmann, Boedecker,

Figure 2.

Abbot and Andrews, I nevertheless recognize in these men brave pioneers, and their example inspires me with the courage to appear with my results before an audience that is composed of the greatest investigators in our particular field of research.

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. M. L. Rhein, M. H. Fletcher and Wm. E. Walker.

According to the views that are prevalent in regard to the rôle of the odontoblasts, the surface of the pulp is covered with a single layer of cells that are in intimate contact with each other as are epithelial cells. These are the dentin cells or odontoblasts. Each one of these cells sends a protoplasmic process (dentin fiber) into the dentin. It is claimed that these odontoblasts are perennial, i. e., that they persist during the formation of the dentin, and are neither reduced in number during this process nor replaced by other cells. It is further claimed that the nutrition and the sensation of the dentin is exclusively bound to these dentin cells and their protoplasmic processes. All subsequent formative changes in the dentin, as, for instance, the genesis of the transparent zone in caries and the broadening of Neumann's sheath in senile teeth are also believed to be exclusively due to metaplastic activity going on in the protoplasmic processes of the odontoblasts.

The great advantage of this theory is its simplicity, for the most complicated physiologic processes can be explained on a very simple, one might almost say unitarian histologic basis. The very fact, however, that everything seems so simple should lead us to be skeptical. Recent investigations into the structure and the composition of the albumins teach us that things that appear exceedingly simple are nevertheless most complicated, and it seems hardly probable that different physiologic processes can be explained on the basis of one histologic unit. True, the adherents of the odontoblast theory point out that in lower orders of animal creation a single cell or group of cells may occasionally assume all the functions of the organism and that similar conditions might obtain in the case of the odontoblasts; against this argument we can formulate the objection that the odontoblasts are simply parts of a more complicated organism, and that in higher orders of animal creation the anatomic differentiation proceeds *pari passu* with the physiologic division of labor that becomes operative in complicated organisms. One might further object that in no vertebrate is any other cell variety known to exist whose protoplasm can at the same time perform the functions of nutrition, of sensation and of metaplastic transformation.

These theoretic objections alone do not, however, lead me to doubt the correctness and the validity of the odontoblast theory as it is accepted to-day; I have, moreover, been able to discover a number of histologic facts that can not be reconciled with this theory. It is the main object of this address to demonstrate these histologic facts to you with the aid of illustrations that I have made from my microscopic preparations.

I have frequently seen in the so-called pulp horns of the dentin germ in the fetus and the new born that the dentin cells were arranged in a multiple layer. Figure 1 is one of a series of sagittal sections through the anterior dental germs of a new-born child. You will notice that each dentin cell is pear shaped; you will also notice the direction of each dentin fiber and of the capillaries, for all these features show that we are actually dealing with a longitudinal section and not with a diagonal section in which the multiple arrangement of the cells might be simulated. The layer I am discussing consists of ten to twenty rows of cells. The individual cells show no trace of lateral flattening from mutual pressure; on the contrary, capillaries and fibrillæ will be seen running between the different cells in a direction that is parallel to the longitudinal axis of the dental germ. It is clear, therefore, that the cells are not arranged in several layers on account of crowding or lack of room and mutual pressure.

The structural changes in the dentin cells also call for discussion. It will be seen that the cells become paler from the bottom toward the surface of the layer; that the nuclei disappear and that the cell boundaries become indistinct, until finally near the margin of the dentin hardly any cell remnants can be seen; for in this zone the changes in the substance and the structure of the cells are so far advanced that the dentin cells have become fully disintegrated and have disappeared from view.

If with Figure 1 we compare Figure 2 that is made from a frontal section through the pulp ridge of a young calf tooth, we will find the same conditions. Here, again, we see a broad layer of oval and round cells that are already beginning to become pale, extending up to the edge of the dentin. The layer here consists of some twelve rows of cells. These cells are odontoblasts in a state of dentinogenous metamorphosis, and show evidence of beginning disintegration. Between the cells we see capillaries running in the same direction as the dentin canaliculi. Below this zone we see the pulp cells in close aggregation, arranged in rows and extending their processes into the layer of disintegrating odontoblasts. These cells are in a state of conjugation and lead by that the formation of odontoblasts.

In preparing a tooth germ according to the method of Koch-Weil and in making a section without decalcification, spherical solid structures are seen in place of the pale disintegrated odontoblasts. These spheres were formerly considered to be dentin spheres or globular masses, and were described by these names. In another stage of the formation of dentin a transparent, homogeneous layer composed of single trabeculæ is occasionally seen in place of the disintegrating odontoblasts.

If a tooth that is still in a developmental stage is only incompletely decalcified, spherical structures are also seen in the place of disintegrating odontoblasts. Many of these little globules, however, contain remnants of cells and nuclei; in injected specimens I was even able to detect capillaries between the spheres. These capillaries could be sharply differentiated from the colorless spheres of dentinogen by their intense color.

After this discursion you will be able to understand Figure 3, which is prepared from a frontal longitudinal section through the germ of a molar tooth in a newborn infant. The preparation was decalcified until all the calcium salts were removed. In the natural state dentinogenous masses of spheres were found throughout the whole visible portion of the pulp. After careful and thorough decalcification, a wide layer of disintegrating cells was seen instead, in which odontoblasts could no longer be found. Toward the center, pulp cells are seen that are odontoblasts, and that send processes or fibrillæ into certain portions of the area of disintegrating cells and through this zone into the dentin.

In a later stage of formation dentin appears in the place of the mass of globules, and the pulp cells are seen to have undergone metamorphosis into trabeculæ of odontoblasts. Some of them become distended and appear as cartilage cells that are surrounded by a light areola. This is the stage that preceded the disintegration or the dentinogenous formation of globules and that is illustrated in Figure 4. This specimen is prepared from a longitudinal section through the dentin germ of a sheep's fetus.

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As long as the formation of dentin continues, the arrangement of dentin cells in multiple layers can be demonstrated. In a preparation from the longitudinal section through a normal bicuspid in a girl of 12 years, the layer of odontoblasts still consists, at some places, of seven to eight rows of cells. I have been able to show in innumerable sections that the odontoblasts that are arranged in several rows underneath each other are not merely different layers of a single row that have become displaced so as to lie below one another, but really consist of several rows of cells.

I have been able to demonstrate this conjugation of pulp cells for the purpose of odontoblast formation in the earliest developmental stages. In Figure 5, made from the tooth germ of a human fetus, the genesis of the small number of odontoblasts that is formed in this specimen from confluence or conjugation of pulp cell (mesoblasts) can be clearly seen. In those places in which no odontoblasts have been formed, single fibrillæ, i. e., preformed dentin fibers, appear underneath the layer of enamel cells at the margin of the dentin germ.

Figure 3.

In a somewhat later stage and after dentin has already been formed, odontoblasts arranged in trabeculæ appear. Many of these later odontoblasts, however (as shown in Fig. 6), no longer possess a nucleus, whereas the odontoblasts in Figure 5 may even possess two or three nuclei.

I believe that I have adduced valid arguments against the existing odontoblasts theory by the demonstration of these illustrations (Figs. 1 to 6), for I have been able to show (1) that, at least in the earliest developmental stages of the teeth an odontoblast originates from several cell units; (2) that during the different periods of tooth formation a multiple layer of odontoblast cells can be demonstrated; (3) that, finally, the external rows of this layer undergo metaplastic transformation so that they disintegrate. Consequently I argue that it is impossible for each odontoblast to persist throughout the whole period of tooth formation without being destroyed and subsequently replaced by other cells from which the dentin is ultimately formed.

The innumerable smaller cells that are seen underneath the layer of odontoblasts have been completely ignored by the adherents of odontoblast theory. The fact, moreover, that the nuclei of the odontoblasts show no karyokinetic figures has been misinterpreted by them. The replacement of the odontoblasts that are destroyed in process of dentin formation does not occur by cell regeneration and karyokinesis of nuclei, but by proliferation of the small underlying pulp cells that are connected by innumerable protoplasmic anastomoses with the dentin cells.

The salient feature of this whole investigation is to show that dentin cells are actually used up in the process of dentin formation. If it should be possible to demonstrate the presence of transition forms between the different forms of cells that are in process of metaplastic metamorphosis this postulate would be fulfilled. When the formation of dentin proceeds quietly and uniformly, such transition forms are not easy to find when the formation of dentin, however, proceeds in an irregular manner, i. e., when "functional irritants influence the formation of dentin," then it is an easy matter to find such forms of cells. I take the liberty of demonstrating by the following illustrations what I wish to show. The specimens are taken from the

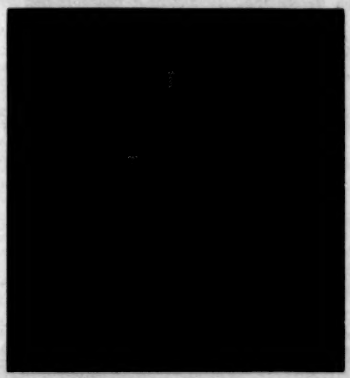

Figure 4.

roots of teeth from ruminants, rodents and fish. I have already in a separate monograph described the results of these particular investigations on the formation of dentin in these species.

Figures 7 and 8 are made from cross sections through the root of a cow's tooth in its first stage of development. We see a narrow strip of dentin with fenestrations; within the openings of the dentin are seen odontoblasts, some of them still connected with one another by protoplasmic processes. The substance of the majority of the cells is changed, and owing to "dentinogenous transformation" that is taking place, they appear black. In the narrow odontoblast layer we see pale odontoblasts, and in addition some cells that are colored black. In this layer, therefore, we see the same change in the substance of the cells throughout.

In Figure 8 the layer of odontoblasts is irregular, somewhat broader than above and interrupted in many places by protruding plugs of dentin. The odontoblasts of this layer correspond in regard to arrangement, form and substance to those that are found in the interior of the dentin.

The gradual transition of pulp cells into the layer of odontoblasts, as well as the transition of the odontoblasts into particles of dentin, can be seen clearly in Figure 9, made from the first dentin appearing in the

Figure 5.

roots of a cow's tooth. The changes in form that the odontoblasts undergo in the process of dentin formation can be seen particularly well. In Figure 10, in which we see that the dentin is broader, the arrange-

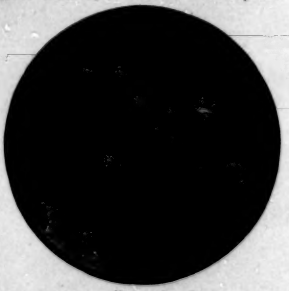

Figure 6.

ment in rows, the conjugation and the changes in the substance of the odontoblasts can be seen on a somewhat larger scale. In Figure 11 the dentin contains two plugs, consisting of different kinds of cells. The other

Figure 7.

margin of these plugs is very pale and is seen to be undergoing metamorphosis to dentin.

These plugs that frequently pass through the layer of odontoblasts and almost penetrate to the cement layer in the dentin, may easily create the impression that dentin had been previously formed, had again been absorbed and had been subsequently replaced by pulp tissue that had penetrated into the spaces created in this way. This view, however, is opposed by very valid arguments. I have studied the peculiar formation under discussion through all developmental stages, i. e., from the very beginning of tooth formation to the completion of root growth, and I could determine on the basis of thousands of observations that these plugs never

Figure 8.

penetrate into finished dentin, but are only found before the formation of dentin is complete. The plugs represent masses of pulp that remain behind in certain areas, owing to an irregular development of the dentin. Later these plugs are destined to undergo the same metamorphosis as other portions of the pulp that are further advanced in their development. Finally these plugs disappear and the area they occupy is replaced by normal dentin.

Gero Rudas has recently stated that the presence of cells in the dentin is always due to the invasion of

Figure 9.

leucocytes, and that the development of the pulp is deficient in those places in which incapsulated pulp cells are found. I am forced, however, to deny the correctness of these statements from my own experience. I believe I have shown that the cells within the dentin do not consist of invading pathologic leucocytes, but of mesodermic cells and dentin cells that have been passively inclosed. Under normal conditions these cells

disappear without leaving a trace. Only in those cases in which the developmental processes are arrested—as, for instance, by rapid and great destruction of the cutting edges of the teeth from overuse with resulting

Figure 10.

atrophy of the pulp—do we see deficient development of dentin in such places.

In the dentin of certain animals, however, we sometimes see single cells, cell groups and cell territories

Figure 11.

that probably persist during the life of the animal; they must either persist as living cells that are normal or as decayed cell rudiments. I have been able to find such cells, particularly in the teeth of rodents and most fre-

Figure 12.

quently in the molar teeth of rabbits. In Figure 12 such cell territories are shown, and in Figure 13 single cells inclosed in the dentin of rabbits. We know nothing positive in regard to the significance of those cells.

What we learn from the formation of dentin under the influence of functional irritants is that dentin may be formed without a typic layer of odontoblasts and that the pulp cells that were heretofore considered to be completely indifferent are directly concerned in this process; and finally, that the latter are arranged in rows during this developmental process without ever being transformed into typic odontoblasts. The transformation of these cells into dentin may, however, be

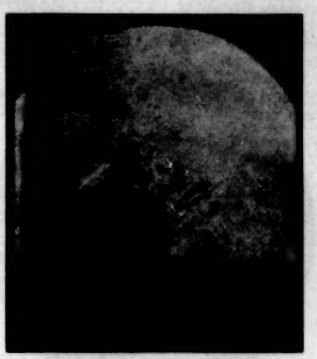

Figure 13.

followed step by step, for it can readily be shown that they, as well as the odontoblasts that are inclosed within the dentin, are gradually converted into dentin; and this, I argue, proves that in the formation of dentin, dentin cells are used up.

At all events we may assume as positive that no conclusions can be drawn from the fact that the odonto-

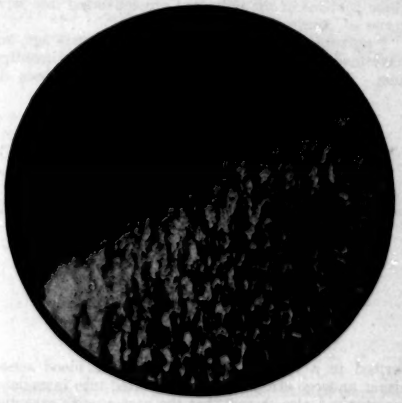

Figure 14.

blasts form one layer in regard to the permanence of the odontoblasts, nor in regard to the continuous disintegration of these cells and the replacement of the destroyed cells by new ones. I am inclined to the belief that the formation of a single layer of odontoblasts constitutes merely a transitory stage in the development of dentin, and a stage, moreover, that need not necessarily be observed in all cases.

In connection with the old odontoblast theory, the idea is often expressed that the perennial dentin cells (whose number always remains the same) advance toward the pulp as well as toward the dentin, and that in process of advancing toward the pulp they displace this tissue. The question is not decided, however, whether or not all the constituents of this displaced pulp undergo atrophy or whether they are merely compressed. In the light of my discovery of the metamorphosis of pulp cells into dentin cells and of the continuous degeneration of the latter, this view is altogether untenable.

Only one explanation seems satisfactory, namely, that more and more of the pulp becomes included in the

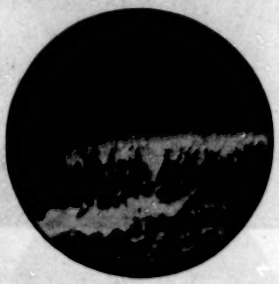

Figure 15.

process of dentin formation, must assume consequently that the pulp becomes smaller and smaller, and we do not need to postulate compression nor atrophy of the pulp to explain its gradual shrinkage.

What becomes of the blood vessels and the nerves in those portions of the pulp that are converted into territories of dentin cells?

I attempted to solve this query many years ago, and have made it the subject of a comprehensive investigation. The main results of my studies have been de-

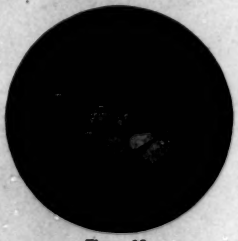

Figure 16.

scribed in a lecture. I found that the blood vessels either undergo atrophy or are converted into intraglobular spaces. I also showed that the nerves, with exception of the axis cylinders, are converted into a hyaline substance that later undergoes calcification and that the axis cylinders partially disappear and partially persist. At the same time I showed that these cylinders are very difficult to demonstrate histologically.

One of my arguments in favor of the view that new pulp areas are constantly included in dentin formation, is that the histologic structures within and below the odontoblast layer undergo continuous changes. At one time we may see numerous capillaries between the odontoblasts, occasionally even between them and the layer of dentin; in other cases, a layer of odontoblasts will be found containing no trace of blood vessels. Sometimes the pulp immediately below the odontoblasts contains very many cells and sometimes it contains very few. Frequently a large number of very fine fibers are seen in this zone, constituting what is called Weil's layer; in other instances this layer will be found to consist of a finely granular material containing neither cells nor fibers. The vaso-dentin of fish teeth is a classical example of the continuous participation of pulp territories in dentin formation without the agency of odontoblasts. If we look at the question in this light, the dentin fibers must need assume an altogether different histogenetic relation to the odontoblasts than has hitherto been postulated. It seems impossible that the fibers should arise exclusively from the odontoblasts that are situated at the surface of the pulp, and they must also be imagined to arise in part from pulp cells situated deeper down in the pulp. In other words, they must be more or less preformed in the pulp, and can not be said to originate by metaplastic transformation as a

Figure 17.

residuum of the dentin cells in the process of dentin formation.

The next slides demonstrate these postulated conditions. In Figure 14, made from the molar tooth of a young rabbit, a layer is seen underneath the young dentin that contains very few cells and that is traversed by fibers. Here dentinogenous disintegration of odontoblasts has taken place and the dentin fibers originate from the deeper cells.

Figure 15 is made from the tooth of a sheep fetus and under a high power shows fibers that run between the multiple layer of odontoblasts. In other words, these fibers pass through the whole layer of the odontoblast cells into the dentin.

Figure 16 is made from the pulp of a young human premolar. Fibers will be seen passing from the layer of odontoblasts deep down into the pulp; these fibers constitute the so-called layer of Weil.

Figure 17, made from the same series of cuts as Figure 16, shows a spot in Weil's layer under a higher power. Numerous fibrillæ are seen to originate from the circumference of a single capillary. These fibers enter the odontoblast layer. They are very different in appearance; most of them stain like fine connective tis-

sue fibers; some of them are fine tubules that are occasionally found to contain a few red blood corpuscles. In most cases, however, they are so fine that blood corpuscles can not pass through. Formerly I described these tubes as lymphatic channels, but am now inclined to the belief that they are blood vessels and that they constitute very fine nutritional or tissue fluid fibers of a variety that has hitherto never been described in dental tissues. By a special method of preparation I have been enabled to demonstrate large numbers of them between the dentin cells, and could also repeatedly demonstrate their presence in dentin. These channels, that vary in thickness from one-fourth to one-third the

Figure 18.

width of a cell nucleus, usually terminate in a knob-like loop.

I call your attention particularly to these channels and capillaries that pass between the dentin cells, for there is resemblance in regard to distribution and location between these structures and the dentin fibers. In Figures 15, 16 and 17 both structures are seen to pass side by side through the odontoblast layer and below it,

Figure 19.

i. e., in Weil's layer; but I have also been able to show repeatedly that in addition to Tomes' fibers fine channels frequently enter the dentin, the method I employed for demonstrating their presence being either injection of the specimens or special preparation of a series of cuts made from the fetus of cows, fish and sheep.

The question of the nutrition of dentin can only be solved after the relation existing between Tomes' fibers and the fine channels that I have demonstrated between the odontoblasts is explained.

I believe, however, that I have definitely solved the question of the sensibility of dentin by my demonstration of the entrance of nerves into the dentin. That the sensibility of dentin is not dependent on the presence of odontoblasts in the dentin, as taught by Black, Walkoff and other authors, could be demonstrated clinically by the fact that teeth whose pulp was completely calcified and that contained no more odontoblasts were still highly sensitive. In these cases of general calcification the axis cylinders were not involved in the process and remained intact.

Figure 20.

Boll in 1868, Boedecker in 1883, the writer in 1892 and Römer in 1899 demonstrated the fact that pulp nerves pass into the layer of odontoblasts. The deviation of nerve fibers between the odontoblasts and the dentin was observed in 1892 by Retzius and by Huber in 1899. The entrance of nerves into the dentin I demonstrated in 1892 and Römer in 1899.

In older specimens nothing but pale fibers are seen in those places were nerves entered into the dentin.

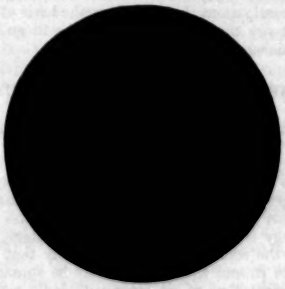

Figure 21.

These fibers, however, are clearly differentiated from the other tissues. This may be seen in slide 25, made from an old specimen prepared from a young rabbit's tooth.

In preparations made according to my modification of Mallory's stain, the axis cylinder is clearly differentiated from all other stained tissues. Preparations of this character, as will be seen from the following slides, can be preserved for a passably long time.

In Figure 18, made from the dentin germ of a sheep's fetus, a few of the axis cylinders that run toward the

center of the odontoblast layer between the dentin cells can be clearly recognized. They pass from the parietal sheath or the nerves of the dentin germ and can be followed through the whole odontoblast layer beyond the boundaries of the dentin.

In Figure 19 the entrance of nerves into the dentin can be seen still more clearly. One of the axis cylinders is seen to terminate in a knob-like ending in the dentin, and another one terminate in a similar way before reaching the dentin, i. e., in the odontoblast layer.

The course of the nerves in the odontoblast layer varies greatly. They often traverse the layer in the same direction as the dentin channels and the odontoblasts. In some places they deviate from this direction. Sometimes they form a veritable plexus with all their small lateral branches. The nerve fibrils apparently originate from cells and cell nuclei. If one looks carefully it will be seen, however, that they are merely close to the cells and really pass alongside of them.

At the point of division of the nerves of the odontoblast layer I have frequently seen one or more spindle-shaped enlargements. Such places are shown in Figure 20.

In conclusion, I take the liberty of demonstrating in Figure 21 the course of the nerve fibers within the dentin channels in a cow's tooth. The preparation was made according to Golgi by the sublimate method after the specimen had previously been injected with methylene blue. The fibers of Tomes appear pale; the fibers that I call axis cylinders are darker and frequently form spirals around the dentin fibers. They are situated between the walls of the dentin channels and the fibers of Tomes.

Basing on a series of histologic facts that I have attempted to illustrate to you with the aid of a few photographic slides of some of my specimens, I believe I have demonstrated the generally accepted odontoblast theory, the theory of dentin formation and of the sensibility of the dentin are untenable. While I do not dare to substitute a new and complete theory for the old one, I hope, nevertheless, to have contributed a few new facts by my investigations that may form the basis of an odontoblast theory that will satisfy us both in an anatomic and physiologic sense.

DIABETES AND OBSCURE PHYSIOLOGY.

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SAN FRANCISCO.

Of the many unsolved problems in pathology none perhaps possesses a greater interest to both theorist and practitioner than does the origin of diabetes mellitus. Its etiology is even yet shrouded in mystery, notwithstanding the enormous amount of study that has been devoted to it, and the situation may be summarized in the statement that of no other pathologic condition is there so much known, and yet so little. Many and various have been the theories advanced from time to time, each having a few facts apparently supporting it, but as they conflicted with each other in important particulars, one after another they were abandoned, for the advancement in physiologic chemistry made it possible more and more to explain the different and complex processes by means of which the several classes of foods passed through stage after stage of preparation and elaboration until they were fit to become incorporated into the tissues of highly organized beings. One after another the more conspicuous organs were taxed with the responsibility, and were believed to be the seat of the diabetic phenomena. But with the progress of science the theories on which these opinions had been based were discredited, and they were reluctantly given up.

The theory that will be set forth in this paper is believed to be new as concerns its application to diabetes mellitus; but it has, however, appeared previously in medical literature in relation to purely physiologic researches concerning the ultimate state of the carbohydrate foodstuffs immediately preceding their absorption into the tissues. The various known facts on which this hypothesis is erected will be cited as required, not always chronologically, but in the order in which they apply here.

The inquiry concerns physiology as well as pathology, and, if the theory is correct, is as important to one as to the other. But before making any definite statements it will be in order to review briefly the experimental and clinical knowledge of diabetes mellitus, adding thereto our own observations.

The history of the scientific study of the subject up to the present, may with propriety be divided into four periods.

The first was inaugurated by the brilliant "piqûere" experiments of Claude Bernard. The important results finally arrived at through this class of experiments were, first, that violent stimulation applied to various parts of the nervous system was generally followed by glycosuria; second, that this was the result of a sudden liberation of glycogen in excess sufficient to pass through the renal parenchyma. Here we have strong evidence to show that under some conditions the nervous elements alone may be concerned in the production of some of the diabetic phenomena. This possibility has been further strengthened, in some instances, by necropsies showing definite pathologic conditions in important nervous locations. To this class may perhaps belong the occasional instances of diabetes following severe shocks of emotional and psychic nature; also those grave cases where no morbid anatomy could be found.

The second period began with the series of experiments that demonstrated the power of certain drugs, notably phloridzin, to produce temporary glycosuria. But the glycosuria obtained from phloridzin was found to be very different from that derived from the preceding experiments on the nervous systems. According to Von Mering and others it does not appear to depend upon glycogen liberation, the blood being poor in dextrose, and the glycosuria occurring in starving animals, and even after extirpation of the liver. The dextrose here must be formed principally from the albuminous tissues, and it seems probable that the glycosuria is the result of an altered condition of the renal functional tissue, brought about by direct action of the poison itself. This opinion is held by no less an authority than Von Noorden, who suggests the possibility that in some clinical cases the glycosuria may be the result of unknown toxins analogous to phloridzin circulating in the blood and acting on the kidneys. It seems evident from these researches that there are poisons existing in Nature capable of causing diabetic symptoms through their influence on the renal functions, and therefore clinical examples of diabetes mellitus from such sources are not at all beyond the range of possibility. There is no question but that the kidneys frequently exhibit pathologic conditions in diabetes, many showing catarrhal nephritis and at times fatty infiltration. One authority

states that albuminuria is present in about one-third of all cases. Of course much of such pathology is without doubt secondary, being the result of long overwork in excreting water, and irritation from the constant transit of sugar. However that may be, the results of the phloridzin tests must be considered to occupy an important place in the literature of this disease.

The third, or pancreatic, period marks the most important advance thus far made in the study of diabetes mellitus, bringing also new discoveries in physiology. Since attention began to be seriously directed to the pancreas as the organ most concerned, surprising and far-reaching facts have been brought to light. The pathologic findings in about 50 per cent. of the necropsies showed plainly that the functions of this gland were interfered with or suppressed, and these observations perhaps inspired the painstaking and conclusive experiments of Von Mering and Minkowski, and also, independently, of di Dominicis, an Italian scientist. The importance of the work of these men in this field is simply incalculable. It has demonstrated beyond all reasonable doubt that removal or total suppression of function of the pancreas is invariably followed by typical diabetes mellitus. Since such experiments in the human species are entirely out of the question, it follows that these scientists were compelled to obtain their results from careful tests made on the lower animals, dogs having been selected for the purpose. The objection might be—and has been—urged that while the results of such experiments were probably conclusive in regard to the lower animals, they would not necessarily hold good for mankind. In reply to this it is now possible to cite at least one case in man which may be considered as experimental in the diabetic sense. It is referred to by Osler as a patient of W. T. Bull who died of diabetes after extirpation of the pancreas. The previously referred to investigators further showed that the anti-diabetic property does not reside in the pancreatic juice; that a small portion of the pancreas, with its blood supply, remaining in the body prevents diabetes; that practically total extirpation of the organ is necessary in order to produce diabetes. They concluded that the action of the pancreas on the excretion of sugar is probably specific, no other organ possessing it. The latter statement is perhaps too radical in view of more recent studies of the suprarenal capsules. This paper will, it is believed, furnish evidence that will further strengthen the belief in the pancreatic origin of diabetes mellitus, possibly in all of the true cases; but no effort will be made to prove that all cases of apparent diabetes mellitus are necessarily pancreatic in origin, or can be explained by any one theory. But to return. The most significant facts shown in the pancreatic experiments were, that the pancreatic juice had no influence on the production of diabetes, and that the presence of a small portion of the pancreas prevented its occurrence. Of course the only explanation is that the pancreas acts in a manner similar to the ductless glands and that its internal secretion is of far more importance than its digestive contribution.

After consideration of the results derived from pancreatic sources it seems unreasonable to doubt that many cases of diabetes, probably the majority, have their origin in diseases of the pancreas. Lépine's experiments and theory furnish more evidence in support of the conclusions of Von Mering and Minkowski, and di Dominicis, but as it forms a strong link in the chain of evidence favoring the theory to be put forward here, its consideration will be postponed until it is taken up in proper order.

The fourth period in diabetic research may be said to have begun with Crofton's discovery of the relation thereto of the suprarenal capsules, made, I think, in 1901, The present writer regrets not having been enabled to more than glance at the important and very interesting work recently done as a result of this discovery. But the most pertinent fact demonstrated seems to have been that injection of adrenal extracts can cause glycosuria. Previous workers have shown that several chemical substances are able to induce glycosuria, but none of these have been shown, as yet, to occur naturally in human or animal bodies.

At last, however, a substance physiologically present is found to have the property of causing glycosuria when administered under certain conditions. A wide range of possibility is thus unrolled, and a new field, nearly unexplored, presents itself for investigation. Much testimony has since accumulated, confirming the first important discovery and bringing to light new facts, several of which must be referred to.

It was stated in one publication that adrenal extract had been found to have the additional property of converting starch into dextrose. Herter, in 1902, found that when a solution of adrenalin chlorid was applied to the surface of a dog's pancreas glycosuria resulted. He also found, however, that several foreign substances, known to possess power as reducing agents, were able to effect the same, while oxidizing agents had no effect whatever. Herter concluded from these experiments that adrenal secretion produced glycosuria by means of its reducing power of the pancreatic tissue. I shall have occasion to refer again to this subject.

Having enumerated the main conditions now known to bear a causative relation to diabetes mellitus, or to glycosuria, the physiologic aspect of the matter must receive attention. For the purposes of this paper, the carbohydrate group of foodstuffs is the one mainly to be considered. Of course we are aware that in severe glycosuria dextrose may be formed from albuminous tissues, and even from fat to a slight extent, but the most important sources of dextrose are admitted by all to be the other carbohydrates. Physiologic chemistry has hitherto been unable to follow the carbohydrates beyond the dextrose stage, and there has consequently been a gap in our knowledge between the stage and the final assimilation by the tissues; or rather, the consensus of opinion seems to be that normal tissues absorb dextrose as dextrose, without further transformation. From this idea a theory to account for diabetic phenomena was formerly advanced postulating disturbance in the tissues of the function to absorb dextrose. But there is evidence on record strongly implying that dextrose does not express the final effort of Nature in the preparation of the carbohydrates for nutritive purposes.

In 1892 Lépine found that fresh normal blood, after being kept in an incubator at physiologic temperature for some time, contained decidedly less dextrose than at the beginning of the experiment. In diabetic blood under the same conditions the loss in dextrose was not so pronounced. While not as yet confirmed, that I am aware of, by later workers, this demonstration not only receives confirmation from some of much earlier date, but is thereby actually much extended. Lépine's work in this direction seems to have proceeded no farther than the observation that dextrose was lessened in amount in blood which had stood some time at normal temperature. It stands to reason that if dextrose is diminished under such conditions something else must be formed. The next thing, then, to determine is, if

possible, what this something is, and therefore another series of experiments will now have to be referred to.

In 1872 Ford made a number of careful tests and elaborate calculations in relation to postmortem chemical changes occurring in normal blood and tissues. He worked on the theory that sugar is first converted into alcohol before it is possible for the tissues to derive benefit from it. In a large number of experiments a substance resembling alcohol, physically and chemically, was invariably recovered in minute amounts from fresh blood and tissue; from putrescent blood and tissue a much greater amount of this substance was always obtained. The amount obtained by experiment corresponded approximately to the amount of alcohol calculated, based on the amount of carbon ingested and on that exhaled. The smallest amount of alcohol was obtained from fresh liver tissue, and by far the largest from putrescent liver tissue. It is hardly conceivable that this alcohol, if such it was, resulted from anything else than the dextrose in the circulation, and in the case of the putrescent liver tissue from the store of glycogen previously liberated as dextrose. The tests on which Ford relied to demonstrate that the substance he obtained was alcohol were the usual ones then known to chemistry.

Ford's remarkable researches received corroboration in the main idea in 1873, when Dupré and Béchamp—it would appear independently—discovered a substance resembling alcohol in normal urine, and from persons who had not exhibited alcohol for a long time. This discovery is also said to have been first made by Lieben in 1870, and he also observed the phenomenon in the urine of dogs, horses and lions. In 1875 Rejewski obtained the substance from the urine of rabbits.

The statement that the substance found by Ford and the others was really alcohol, has been contested, as might naturally have been expected. The substance in question responded to the chromic acid test and the iodoform test; its watery solution had a lighter specific gravity than water; it yielded acetic acid on oxidation; and concentrated solutions were inflammable; the optical appearance in the conducting tubes, as noticed by Ford, resembled that of alcohol. Commenting on the fact that this physiologic substance reacts to all the known tests for alcohol, H. C. Wood very pertinently observes that "possessing the physical and chemical characters of alcohol, to ordinary minds it is alcohol."

The experimental testimony is conflicting as to the exact place of alcohol as a nutritive agent, its relation to heat production, electro-chemical action, carbonic acid and urea elimination, etc. But there is no question of the fact that alcohol is burnt up, or loses its identity, in the system, and that practically none of that ingested is eliminated as alcohol, unless administered in toxic amounts. It must be capable, therefore, of supplying, to an extent, the needs of the organism in health, and far more so in some pathologic conditions—a matter of every-day clinical experience.

In the light of present knowledge it would appear probable that the asserted conversion of dextrose into alcohol in the system is effected through the agency of an enzyme normally present therein. Our own experiments along this line, made in 1901-1902, are now in order. I am under obligations to Surgeon P. M. Carrington, in command at Fort Stanton, N. M., for extending to me such privileges as the laboratory of that station afforded while engaged in this work.

Solutions of dextrose, sterilized by boiling, were treated when cool with pancreatin preparations, and then set by in a warm place. After a number of hours small portions of the mixtures were distilled off and subjected to the iodoform and chromic acid tests for alcohol, giving in each case a positive reaction. More solutions were prepared and analyzed quantitatively, before and after prolonged treatment with pancreatin, to determine if any variation occurred in the percentage of sugar. A large number of these tests demonstrated a slight loss of sugar in nearly every case after having been acted on for some time by the pancreatin. Solutions of levulose tested before and after in the same manner showed a greater proportional loss of sugar than did those of dextrose. It seems hardly necessary to add that in each experiment the amount of water lost by evaporation during the period of fermentation was replaced by distilled water before reanalysis; and that the differing affinities of dextrose and of levulose for copper hydroxid were taken into account. Solutions of cane sugar treated with pancreatin gave, in their distillates, the iodoform and the chromic acid reactions for alcohol. The vapor from a dextrose and pancreatin solution imparted a slight cloudiness to lime water, but as the experiment was rather carelessly made, and, unfortunately, was not repeated, it can not be considered as positive. Pancreatin itself contains considerable soluble material capable of reducing copper solutions, and this self-contained reducing agent undoubtedly took some part in the fermentative processes. Being apparently for the most part dextrose its presence should not detract from the importance of the other findings, except in the instance where an alcoholic distillate was obtained from a cane sugar and pancreatin solution. A strong point against any undue importance of this factor in the other experiments is that dextrose and levulose solutions did not lose in sugar proportionally, and that the variation in the levulose was inversely what might have been expected from ordinary accidental fermentation.

Assuming, then, the correctness in the main of all the experimental findings herein adduced, the situation physiologically would appear thus:

1. That in normal blood dextrose undergoes chemical modification before absorption by the tissues.

2. That in normal blood alcohol develops from disintegration of dextrose.

3. That alcohol is present in minute quantities in the urine of total abstainers.

4. That in chemically pure solutions of dextrose and levulose treated with pancreatin, sugar is lost and alcohol (and carbonic acid?) developed, the change being more marked in the case of levulose.

5. That the agent responsible for the chemical reaction is an enzyme normally present in blood.

6. That this enzyme has its origin in the pancreas alone, for when that organ is removed dextrose remains unchanged.

7. That interference with or disturbance of this function of the pancreas initiates a group of phenomena known clinically as diabetes mellitus.

SOURCES OF ERROR.

It is true that at the present time much of the experimental data referred to lacks corroboration by other observers, notably that of Lépine, Ford, and the present writer. I have not seen Ford's original paper, being indebted to the section on alcohol in H. C. Wood's Therapeutics for a synopsis of his results, and also much additional valuable information. But that there were sources of error in Ford's work seems probable when it

is remembered that in his time bacteriology as a science hardly yet existed, and that therefore he may not have taken into account the action of saprophytic bacteria in the change from dextrose to alcohol. In this way it is likely that his results with putrescent tissues were partially erroneous. But in view of the very significant fact that he obtained traces of alcohol from fresh blood and tissue, the importance of any possible errors in connection with tissue having undergone bacterial action ought not to be exaggerated.

Such objections, however, can not be urged in regard to Lépine's results, for they were reached at a time when the principles of modern bacteriology were familiar to all contemporary scientists. Though Lépine is not on record, that I am aware of, as having demonstrated alcohol, he certainly has demonstrated the complementary fact, namely, the disappearance of dextrose in normal blood, and to a lesser extent in diabetic blood. Lépine's and Ford's separate blocks of evidence, when placed side by side, form a chemically perfect whole, the former having shown that sugar disappears, the latter that alcohol appears. Collateral testimony is afforded by the work of other investigators cited who demonstrated the presence of traces of alcohol in normal urine.

In our own work, which had for its object the demonstration of a pancreatic enzyme able to convert dextrose into alcohol, the principal source of error was infection of the solutions with saprophytic bacteria. By a process of exclusion it was made evident that the infection was derived from the commercial preparations of pancreatin, a fact of no importance whatever ordinarily, but of considerable in experiments of this nature. In only two instances were perfectly sterile solutions made naturally. Efforts were then made to control bacterial action by means of small amounts of boric acid, oil of cloves, etc. It was found that in order to suppress saprophytic action much more of these substances was required than is currently believed, so much, in fact, that the action of the enzyme was nearly inhibited. By comparing the notes of a large number of experiments under these adverse conditions it was shown, however, that a slight loss of sugar nearly always resulted. The source of error here, if there was one, would have occurred in the manipulation, toward the end of each test, of the Fehling solution, by no means an ideal method where small differences have to be computed, but perhaps the best in the long run. The levulose preparations showed a greater loss of sugar than did those of dextrose. In solutions of either sugar with pancreatin where no antiseptic had been added, and where saprophytic action occurred, the loss of sugar in a given time was far greater, especially in the case of levulose. The infecting organism most in evidence was a large spore-forming chain-rod, generally alone, occasionally accompanied by other germs in small numbers. The yeast fungus was not found to be present at any time.

How much of the large amounts of sugars lost here, in excess of that lost where bacterial action was inhibited by antiseptics, depended upon the pancreatic enzyme, and how much was due to bacteria, we are unable at present to say, and can place reliance only on the results obtained where the action of bacteria was eliminated. It is certainly worthy of note, though, that the corresponding losses of dextrose and levulose under the same conditions of infection were so widely different as to imply something more at work than bacterial action alone.

Among the number of experiments made to demonstrate the development of alcohol were two in which, fortunately, no infection occurred and no antiseptic was employed. In these cases the principal source of error to be considered would have been in the chemical tests to which the distillates were subjected. Both the iodoform test and the chromic acid test are well known to react in the same manner with many substances besides ethyl alcohol. In this connection it was observed that the chromic acid test gave the same color reaction with methyl alcohol, dextrose, levulose, lactose and cane sugar. Seeing that both tests gave typical reactions with material derived from sources more likely in the natural order of things to generate ethyl alcohol than anything else; and seeing that such a result fits in very naturally with Lépine's and Ford's results; it must be admitted that strong reasons exist for presuming the reacting substance to have been alcohol.

An attempt will now be made to account for diabetic phenomena on the theory that they are the expression of an abnormal condition wherein the hypothetical alcoholic function of the pancreas is disturbed.

DIABETES MELLITUS.

If it is a fact that the normal internal secretion of the pancreas must convert dextrose into alcohol before the tissues can make use of it, then it naturally follows that a consideration of this obscure function would have importance in relation to true diabetes mellitus of pancreatic origin, as our knowledge stands at present. The various and diverse manifestations of the disease, when considered in this light, seem to fall easily into well-defined places, while at the same time theories placing the responsibility on other organs are seen to be untenable. These remarks are not intended to apply to other than pancreatic forms of diabetes, or glycosuria, for we believe that such may occur, and will venture a few remarks on them in their proper place. We will begin the discussion with the behavior of the liver in reference to pancreatic diabetes.

The most significant feature here is the absence of glycogen, practically, in the liver and muscular tissue. This, together with the notable excess of dextrose in the blood, suggested at least three theories, two implicating the liver; the first for over-activity, the second for under-activity; while the third placed the blame on the tissues in general as having partially lost their power to absorb dextrose. The pancreatic alcoholic theory at once clears up all this; the liver is seen to be merely doing its duty while the tissues, being unable to assimilate the unaltered dextrose furnished by the liver, are imperatively and without intermission demanding nourishment. But the nervous mechanism, which in health had apprised the liver of the needs of the tissues, is still uninjured, and the constant demand for food is as constantly responded to by the liver in the only way it is capable of doing; it has no time to store up glycogen, and the fact that the excess of dextrose given out is injurious to the organism implies no fault in the liver whatever, but actually the reverse. If the liver were the seat of the assumed normal alcoholic change in the condition of dextrose, then there would be found no free dextrose in the blood except in minute amounts like glycogen, for all sugar would be immediately seized and stored up as glycogen, never to be released except in the form of alcohol.

The existence of glycosuria and polyuria, without other evidences of nephritis, is merely symptomatic; the glycosuria because the normal percentage of sugar is ex-

ceeded, and the polyuria because of the irritating action of dextrose on the renal tissue. Secondarily, of course, a true nephritis will probably occur if the condition is not ameliorated.

The remarkable and inexplicable property of levulose to form glycogen and diminish glycosuria can now be explained. Levulose is more rapidly and easily converted into alcohol than is dextrose by the pancreatic enzyme, and the reduced amount or power of the latter in diabetes is thus able to take care of considerably more levulose than dextrose, and the liver and muscular tissues are enabled to store a certain amount of glycogen.

As milk is comparatively well tolerated in diabetes, it follows that lactose must have properties somewhat similar to those of levulose. I have not experimented with lactose as with levulose, but would expect to find it somewhat similar in this respect. It is noteworthy that there is a curious analogy in the purely chemical and the purely physiologic contrasting properties of dextrose on the one hand, and levulose on the other. A definite amount of copper hydroxid will combine with more levulose and still more lactose than with dextrose; in physiology, on our theory, levulose and lactose are more readily appropriated by the system than is dextrose, the fact being especially noticeable in diabetes mellitus.

The increased elimination of urea and uric acid is natural and proper, since in this disease a larger amount of albuminous material is employed, irrespective of the kind of food ingested, for if that is lacking in proteids the deficit is made up from the tissues themselves.

The fatty condition of the blood is apparently a further effort of Nature to store glycogen and form dextrose. It has been shown that fat in extreme conditions, as in starvation, can form glycogen, and therefore indirectly, dextrose. Diabetes mellitus is merely another aspect of starvation. The greater part of the large amount of food ingested is useless to the organism, for the system is lacking in the element whose presence alone can render it available for its needs. The condition has its analogy in the fable of Tantalus, striving forever to sip "The cup that flies from his arid lip."

The tendency toward acidity of the blood in later stages of the disease, with the development of acetone, diacetic acid and beta-oxybutyric acid, may be referred to several causes. The alkalinity of the intestinal tract depends principally on the bile and pancreatic juice. The liver being constantly overtaxed in the exercise of the glycogenic function and the preparation of proteids and elimination of urea, must in time neglect the biliary function as being subordinate to the others in importance; while the pancreas, diseased in one of its most important functions, can hardly be expected to keep up the standard of its intestinal secretion. It follows consequently that the intestinal juices become in time deteriorated, thus favoring the development of acetic and lactic and other acid substances. These eventually begin to enter the portal circulation, and, after a time, the general circulation, and ultimately change the reaction of the blood. The normal power of the liver to arrest and render harmless the poisonous substances developed in the intestines, becomes diminished, and these adding their baneful influences to that of the general hyperacidity, finally give rise to comatose symptoms.

OTHER FORMS OF DIABETES. RENAL GLYCOSURIA.

There is evidence showing the possibility of diabetes in some cases arising from the kidneys themselves. In the first place, albuminuria and different degrees of nephritis have been observed in perhaps one-third of all cases of diabetes, while definite pancreatic lesions have hardly occurred in more than 50 per cent. of cases.

While in many of the cases exhibiting renal involvement the pathology may be merely secondary to pancreatic disease, it can not always be proven that such is the case. In the series of experiments of which the one employing phloridzin is the type, we are shown that renal diabetes is a possibility, either as resulting from disturbance of osmotic equilibrium, or it may be, of the renal synthetic functions. The fact that severe forms of Bright's disease do not often show glycosuria, complicates the inquiry, and supports to some extent the theories relieving the kidneys of responsibility in glycosuria. The question of renal involvement will be again alluded to under the head of therapeutic suggestions.

GLYCOSURIA OF NERVOUS ORIGIN.

That pathologic conditions involving the nervous system can induce glycosuria has been shown experimentally and clinically; but even here the glycosuria must be indirectly referred to the agency of one or more of the internal organs whose ordinary routine has been disturbed by disturbance of its innervation. The osmotic balance of the kidneys may be disordered; the glycogenic function of the liver, the alcoholic function of the pancreas, or the internal secretion of the adrenals —perhaps also that of the thyroid—may be altered. Thus it may be inferred that defective innervation can, theoretically, inaugurate glycosuria through a number of sources.

ADRENAL DIABETES.

With the discovery of the power of adrenal extracts to cause glycosuria (and to convert starch into dextrose?) a new and interesting element was added to the subject of diabetes. By applying these facts to the present inquiry, together with the known physiologic action of the glandular extract, and assuming the existence of a condition of the adrenals causing over-production of their internal secretion, it would appear that glycosuria may be induced in four different ways, or by a combination of one or more of them, namely, by increased blood pressure; by irritation of the renal parenchyma; by inhibition of the alcoholic function of the pancreas; and by direct action on the stored up glycogen, converting it into dextrose.

In the event of under-production of the adrenal secretion we might assume that one of the first compensatory efforts of Nature would be stimulation of the alcoholic function of the pancreas, the object being to make up the deficit in adrenal secretion by an increase in the production of alcohol, for the physiologic action of the latter ought to enable it to partially substitute the former temporarily. Such a possible substitution has its analogy in the splitting up of the proteid molecule with the formation of an alkaline ammonium compound when from any cause there is a tendency toward acidity of the blood which can not be controlled by the alkaline substances normally present. But since over-stimulation of any organ tends eventually to loss of function, it would follow, on this theory, that a time would come when the pancreas could no longer exercise its alcoholic function sufficiently for the needs of the system. Then the liver would endeavor to supply the want by liberating an increased amount of dextrose, and it would then be only a question of time when glycosuria and the concomitant symptoms of pancreatic diabetes appeared. It may be reasoned in this way that the pancreatic and

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adrenal functions are intimately related; the adrenal secretion may be essential in regulating the exercise of the pancreatic alcoholic function in health, while in the event of insufficiency of the former the latter would be stimulated.

EXPERIMENTAL CONFIRMATION.

It is much to be regretted that confirmation by other observers is yet lacking of much of the data essential to the theory herein advanced. Even Lépine's results, significant as they are, do not seem to have received corroboration; while Ford's work is never alluded to in treatises on diabetes and seems to have escaped attention altogether. My own work is very incomplete at best, but as far as it goes I feel that it can not be altogether unimportant, and trust that it will soon be taken up by others, along with Lépine's and Ford's observations. I intended to submit my results for publication early in 1902, as soon as the series of experiments outlined should have been finished. But unforeseen interruptions occurred and official duties in connection with the routine work of the Sanatorium interfered; and as there is even yet no immediate prospect of my being able to resume the experiments, I have decided to submit such as have been made, together with the theory they suggest, in the hope that the work may be investigated and extended by others, and its value, if it possesses any, be determined.

Because of the presence of saprophytes in the commercial dried preparations of pancreatin, I would suggest that they be discarded in experiments of this nature, and that the fresh organs of animals recently killed be employed. The amount of dextrose or reducing substance in the gland itself or its extract should be determined before treating the sugar solutions. Sufficient alcoholic liquid should be obtained so that its physical and chemical characters can be established with certainty. In the chemical equilibrium of the system the amount of alcohol present must be very small at any time compared to that of dextrose, and therefore in any experimental solution the relative proportions may be expected to approximate similarly; for the principle of "reversibility of enzymes" should be in operation here as elsewhere in the system. If alcohol is really formed the amount should of course bear definite relation to the amount of sugar lost. The fact that small quantities of alcohol are produced in the intestines should not be ignored even though it can not have great significance here, since alcoholic development occurred under conditions excluding intestinal co-operation. The reactions with levulose and lactose should be particularly noted because of their peculiar properties in diabetes mellitus. In all cases control tests would be imperative. The action of adrenal extracts on sugars and starches ought also to receive further attention. The fact should be taken into account that the pancreatic alcoholic enzyme must be present, not only in the pancreas, but throughout the system to a certain extent. It has been asserted that glycerin may assist in the formation of glycogen; it would also be worth while to investigate the behavior of ingested alcohol in regard to that function, remembering that Ford found less free alcohol in fresh liver than in any other tissue. In testing diabetic material for alcohol one would expect to encounter much less than in the normal, perhaps none at all. The chromic acid and iodoform tests would be valueless here because of the likelihood of the presence of acetone, a substance giving the same reactions as alcohol with these tests.

THERAPEUTIC SUGGESTIONS.

If the theory set forth here is the correct one, then the importance of alcohol in the treatment of diabetes is the most obvious feature that presents itself. Based on clinical observations, the best authorities are already nearly agreed as to the beneficial influence exerted by alcohol in diabetes when given in moderation. Clearly on our hypothesis reasonable amounts of alcohol will relieve the pancreas, liver and kidneys for the time being by furnishing ready prepared nourishment and force to the starving tissues; there will be temporary suspension of the immense and constant and all but unavailing efforts of those organs to relieve the strained situation. Very possibly some storage of glycogen may be accomplished during the period of relief thus afforded.

With regard to the administration of pancreatic extracts, Von Noorden and others have not had very encouraging results. Only two methods would appear available in the employment of these preparations. One way would be to give them with or immediately preceding meals, the idea being to take advantage of the presence of the alkaline saliva, since pancreatin can not act in acid media; the doses should be large in order to assure the absorption of an amount of the enzyme, for the major portion would soon be destroyed in the stomach. The other way would be incorporation in alkaline nutrient enemata and injection into the rectum or colon.

I have seen great apparent benefit follow the use of mescal de tequila in two cases, both of them young subjects. Whether this was merely from the alcohol present, or because of specific properties possessed by the drink, I am unable to say, though inclined to put some faith in the latter possibility.

Mescal is a fermented intoxicating liquor derived from the maguey plant, native to southern New Mexico, Arizona and Old Mexico. The unfermented juice of the plant is called pulque, and it, as well as mescal, has a great reputation among the natives as a specific for all "kidney" diseases, pulque being the most thought of. With them diabetes is naturally considered a disease of the kidneys, but there really appears to be some firm ground on which the popular faith in the drug rests, both as regards diabetes and Bright's disease. That it exerts some special influence on the kidneys is certain. In several cases of Bright's disease experimented on at Fort Stanton, N. M., it was found that chronic interstitial cases were much benefited in a short time, both as regarded the amounts of urine and albumin. Chronic parenchymatous cases were also speedily brought under the influence of the remedy, showing lessening of albumin, but there was at the same time a tendency toward suppression which had with it an element of danger. The cerebral effects of overdoses were unpleasant and were induced by much smaller amounts than mere whisky would have done.

In this connection I have to acknowledge my indebtedness to Dr. H. K. Pangburn, Acting Assistant Surgeon, and to Mr. J. E. Beck, Senior Pharmacist, U. S. M. H. S.; the former for daily quantitative urinalyses in the cases under observation; the latter for pharmaceutic preparations of extract of the maguey plant.

In view of its effects in Bright's disease, and remembering the possibility of renal diabetes, the suggestion may be hazarded that while the specific action of the maguey plant on the kidneys would perhaps account for its beneficial action in cases of diabetes of

renal origin, it might not possess any value in the true pancreatic variety.

ETHICAL CONSIDERATIONS.

The assumption of the existence of the alcoholic function of the pancreas, on account of its relation to nutrition in general, diet, habits, and the treatment of diabetes, brings up a final and important consideration, namely, the question of intemperance.

It has been suggested that were a theory such as this one to become generally accepted it would probably exert a baneful influence on the race in general by furnishing a physiologic excuse for increasing the consumption of alcoholic beverages.

When looked at superficially such a fear might seem reasonable; but when examined more critically it is seen to have no foundation.

Everyone is aware that perfect physical health means nothing more or less than perfect functional activity as established by Nature's immutable laws. All efforts made by man to modify these functions have signally failed, and no matter what abnormal extent of tolerance may have been achieved by the pleasure seeker, the epicure or the heavy drinker, their reckoning with Nature must come at last, for they have reckoned without their host.

The man would be a poor physician indeed who saw fit to recommend to his patients the consumption of unusual amounts of cheap glucose candy in place of a portion of their ordinary diet, because he had learned in the study of physiology that glucose represented an advanced effort of Nature in the preparation of the carbohydrate food group.

Exactly the same may be said in the case of alcohol and of the medical man who would advise the employment in health of alcohol as a substitute for a certain amount of food, because alcohol appears to be the final product of an important section of the foods, and, by such specious reasoning, more easy and natural to assimilate than ordinary foods. Nature has made abundant provision and has combined the various nutritive principles in a manner that can not be improved on in the essential particulars. No matter what the advance made in our knowledge of physiologic chemistry, mankind still have to depend on Nature's unvarying processes for their continued existence, and, physiologically, are neither better nor worse than they were ages ago. The natural processes involved in digestion, nutrition and assimilation are not intended to be altered in any way, either by increasing or lessening their scope. The fact that foodstuffs occur in forms that require such extensive elaboration in the system is sufficient evidence of the wisdom of such an arrangement.

When considered in this light it will be seen that the alcoholic theory in physiology is in reality a strong argument in favor of temperance. In health man needs no ready prepared alcohol whatever, except such as occurs naturally in some of the foods in small quantities.

But the situation is very different indeed when the management of disease has to be confronted. If alcohol is a physiologic necessity, as produced in the body in health, then it follows that in the treatment of many diseases its employment as a medicine would be of the greatest possible advantage to the patient. The most obvious indications for its administration would be in those pathologic conditions wherein the mysterious protective agencies are summoned to exercise their functions to the utmost limit in order to cope successfully with some foreign invasion or auto-intoxication which menaces the integrity of the system. Nearly every medical man of experience will concur in the opinion just expressed; while as regards the few who see fit to exclude alcohol altogether, on the ground of religious or other principles, no amount of argument, laboratory experiment or clinical experience, however convincing, can be expected to have weight.

In conclusion, then, from the standpoint of the alcoholic theory in physiology, based upon experimental and clinical results, it would appear that in alcohol we possess the most efficient agent for sustaining the vital forces of the system when its functional activities are paralyzed by the inroads of various diseases, whose presence necessitates the subordination of all other functions to those immediately engaged in the work of repelling the invasion.

RADIUM AND RADIANT ENERGY.*

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The discovery of radium is of universal interest. There is scarcely a science that has not been affected by it. But it can be of no greater interest to any one than to physicians, because of its therapeutic possibilities. The termination "um" indicates that radium has been added to the family of elements.

A substance to be admitted into the list of elements must have the following qualification: It must have a spark spectrum of its own. This spark spectrum must be measured and be different from all other forms of known matter. Radium fulfills this requirement. Demarcay has shown that radium has a spark spectrum of fifteen lines, with no lines belonging to any other element. The discovery of radium during the closing years of the nineteenth century was one of the most wonderful achievements of that century, from a scientific point of view. In some ways it amounts almost to a revolution in our theory of matter. The study of physics and chemistry has made the most rapid progress of any of the sciences in the past few years. The textbooks which the youngest of us used are out of date, so rapid have been the changes and progress along this line of study.

So it may be well to note, in introducing this subject, some of the more essential changes, without understanding which we can not gain a clear idea of the subject before us.

We were taught as school boys that that smallest particle of hydrogen, called an atom, was the least mass of matter known. Since that time, however, Thomson has discovered that all space is filled with inconceivable small corpuscles. These corpuscles, Professor Larkin tells us, are doubtless either electricity in its ultimate refinement or very closely allied to it. A Thomsonian corpuscle is only 1/1000 the mass of an atom of hydrogen. They are so small that the wide spaces in a bar of steel or even in the diamond itself, permit these corpuscles to pass through them. They are positive or negative, electrically speaking. But the corpuscles flowing between all kinds of matter are negative.

Twenty-five hundred years ago Leucippus, the Greek philosopher, suggested the atomic theory of matter. Dr. John Dalton, at the beginning of the nineteenth century, formulated it into the hypothesis which we

* Read before the Pueblo County Medical Society.

find to-day. This theory assumed that all matter is composed of indivisible particles called atoms.

The Italian philosopher, Avogadro, proposed the molecule as the smallest particle of matter which exists in a free state.

The discovery of radium practically establishes the Thomsonian corpuscle theory. We are now taught that small as is an atom, we must look for a particle of matter thousands of times smaller. This particle, so much smaller than the atom, is called an ion. The ion revolves around its fellows at a tremendous rate of speed. These ions of matter are now considered the smallest particles known, being 1,000 to 200,000 times smaller than an atom. Ions compose the atoms and enable them to act chemically.

Science at present holds that matter is made up of masses of ions revolving in their own orbits. That smallest atom of hydrogen is composed of 700 ions. An atom of oxygen contains 11,200 ions. Iron contains 187,000 ions to an atom. An atom of radium contains 120,000. In radium, these ions rotate so swiftly that a violet light is given off. All space is traversed by unknown radiations, and these are arrested in their passage through radioactive substances and transformed into radioactive energy. Radioactive is a recently coined word, but no treatise on physics can be written to-day without it.

Matter, such as barium, uranium, zinc, aluminum, gives out obscure undulations. Radioactive matter gives off these undulations in straight lines in every direction. When matter is in a state allowing it to be active by means of a wave motion, it gives off these undulations. Since the corpuscles that flow between the atoms of matter are negative, they may be drawn out of this straight path by the action of magnetism. This confirms what Maxwell claimed almost half a century ago, that the wave motion of the universe is electromagnetic. Whenever there are 34,000 of these electromagnetic undulations within one inch of space, we see light. If 61,000, we see a violet light. In the spectrum the length of each oscillation is by itself and can be measured.

These waves form a fundamental fact in the study of science to-day. At the very beginning of the seventeenth century, Kepler placed a prism in a ray of sunlight and produced a solar spectrum. About 100 years later, Newton placed a prism in a ray of sunlight admitted into a dark room, thus gaining a much clearer line. At the beginning of the nineteenth century, Wollaston admitted, like Newton, a ray of light into a dark room, but through a very narrow slit, and placing a prism in it, obtained the dark lines in the spectrum. Fraunhofer, a few years later, did what Wollaston had done, but looked at the spectrum with a small telescope. This gave us a spectrum analysis; and spectrum analysis has been one of the greatest studies of the human intellect from that day to this. The discovery of such elements as radium we owe to spectrum analysis.

Three centuries of study and research have discovered only two things apart from mind, in this universe, namely, matter and energy. Since the recent discoveries of the former, no one will venture to say that we have reached the ultimate analysis. Of the latter, energy, recent discoveries are apt to make us feel that our whole conception of work, force, energy, will have to undergo some radical revision. At least, that we are in the infancy of knowledge regarding what we call energy, and to-day a definition is wanted for the question: What is energy?

In 1896, Becquerel discovered remarkable radiation from a sample of uranium. He found that any preparation of uranium emitted continuous radiations. These radiations, he discovered, were similar to the *x*-ray and capable of acting on a photographic plate chemically. The name, "Becquerel rays," has been given to these radiations. Following up the investigation of these Becquerel rays in uranium, M. Curie and Madame Curie discovered from samples of uraninite, that the radiations from it were more powerful than any uranium with which they had experimented. They found this uraninite or pitchblende, as it is commonly called, to have four times the radioactivity of metallic uranium. From this M. Curie came to the conclusion that this radioactivity was due to some new element in the pitchblende. A series of experiments ended in the discovery of a new radioactive substance. This was in 1898. Further experiments succeeded a year later, in 1899, in finding radium.

Radium belongs to the alkaline group of elements, such as calcium, strontium, barium. It has a specific affinity for barium. Madame Curie gives the atomic weight of radium as 225, while barium is 136.4. Radium is obtainable from pitchblende, which is found in Saxony, Bohemia, Cornwall in England, and in Colorado. Uraninite or pitchblende is a heavy, black, pitchy-looking substance. It is composed of two oxids of uranium, with a number of other elements in small amounts. This pitchblende is the source of uranium, but in extracting the latter a residue of rare substances has always been left unused. Uranium compounds have been used to stain glass and porcelain, also to make dye-stuffs, and is of use in photography. M. Becquerel found that uranium exposed to the sun's rays apparently absorbed them. Further experiments, however, showed that pitchblende decomposed the silver salt on a photographic plate. This produced a stir in the chemical world, and it was soon evident that pitchblende contained some substance which could produce photographic images in the dark. This much of the honor in discovering radium belongs to M. Becquerel, the noted French chemist. At this juncture, M. Curie, the physicist, and his wife, began the search for this new element, which Curie was satisfied this uranium ore contained.

Madame Curie was the more enthusiastic in this search, and it is said that it was she who induced her husband to join in the search, which finally resulted in the discovery of polonium, then of radium. They attempted by various experiments to separate this new element or substance in pitchblende, and found not one but two substances. The first one found, Madame Curie named polonium, after her native land, for Madame Curie was born in Poland, and it was as a student in Paris that she met her husband-to-be. The second new substance, they named radium, from radius, a ray, on account of its remarkable radiations. The complex chemical methods by which this substance was separated belongs to a society of chemists, not of physicians. The object now is to find ores which may contain traces of radium. It may be that in the mines of Colorado this element may be found, and to-day it is of far more value than either gold or diamonds.

Just here it is interesting to note in passing that the discovery of radium, like all great scientific discov-

eries, was found along a well-paved way—something like the discovery of the planet Neptune. Recalling our lessons in astronomy, we remember that Neptune was found because, after the discovery of Uranus, astronomers felt that the erratic course of that planet could only be accounted for by the action of another body acting on it. Following out this line of reasoning led those who nightly watched the heavens through powerful telescopes to search for a new star which was exerting its influence on Uranus, and after a diligent search of space, Neptune was located, the planet which was known to exist before it was found.

The peculiarities of uraninite led M. Curie to the belief that it contained some yet undiscovered mineral. The study of physics and chemistry by scholars during the past ten years ending in the discovery of the *x*-ray, the Crookes tube, the ultraviolet ray, the discovery of Becquerel rays in pitchblende, led by a natural process of evolution to the finding of radium.

To Madame Curie, the wife of the noted physicist, belongs the honor of separating radium from its ore. And while her husband shares with her the honor of the discovery, and she herself has been known to the scientific world as the wife of Professor Curie of Paris, M. Curie now stands in danger of being known to the readers of popular magazines as the husband of Madame Curie. The separation of radium from pitchblende marks the greatest contribution to any science made by womankind. Madam Curie has since been given the degree of Ph.D. by the College of Science in Paris as a recognition for her work along these lines.

PROPERTIES OF RADIUM.

As yet radium has only been obtained in the form of a salt. Many forms of glass are turned violet by its action, but it is supposed that this is due to some chemical action on the iron and manganese used in making glass. It has been kept in rock crystal for thirty days without producing any changes in the crystal. One of the most remarkable properties of radium is that it maintains a temperature of 2 to 5 F. above the surrounding atmosphere.

Radium action will pass through four or five inches of oak with the greatest ease. The process of measuring radium energy is too elaborate to explain in a paper of this length. It is common, however, to speak of radium as having an activity of 100,000 or 200,000. This means that taking metallic uranium as a unit of measure for radioactivity, radium has a certain activity equivalent to 1,000, or 100,000 times greater than that of uranium, as the case may be. Radium has been used to distinguish a pure diamond from stones that resemble it by its radioactive effect on the diamond, not producing the same result in the spurious stone. Radium decomposes the silver salt on a photographic plate. The rays from radium act like the *x*-ray in penetrating opaque substances. One grain of radium will melt a grain of ice every hour. In other words, it will melt its own weight of ice per hour. This production of heat will go on constantly without any apparent source, and at the end of months, the radium will be as powerful as ever. Long months of activity show no change in the grain of radium. Its weight remains the same; there is no chemical, microscopic or spectroscopic change. It is impossible for us to believe that this minute mass of matter can give off heat for so long without in some way having it restored or renewed. The explanation of this phenomenon is yet to be found, but it is possible—and this is only a suggestion—that in some way unknown to us radium has the power of absorbing this from the Thomsonian corpuscles.

PHYSIOLOGIC EFFECTS.

Becquerel carried a small particle of radium in a glass tube in his vest pocket. It set up a dermatitis, followed in three days by a burn, and from this an ulceration resulted, taking about two months to heal. A tube containing radium attached to the back of a mouse resulted in its death in twenty-four hours. A few milligrams put beneath the skin of a mouse resulted in its death in three hours. Placed over the closed eyelids, a tube of radium gives a sensation of light. Seeds subjected for some time to the radium influence lose their power of germinating.

The most wonderful property of this new substance is its energy, but, as has been said, the source of this energy is unknown. It seems to possess almost the power of perpetual motion. Two hypotheses have been suggested to account for this energy. One is that the atoms of radium evolve and transform into another simple body, although this transformation can not be located during a year's time. This is the hypothesis suggested by Madame Curie. The other is that radium is capable of utilizing some radiations of unknown nature which cross the space. Experimenters find great difficulty in keeping their instruments free from the effects of this radiant energy. Professor Curie says he would not trust himself in a room containing a kilo of pure radium for fear it would burn the skin off his body, destroy his eyesight and probably kill him.

Radium makes all substances brought in contact with it more or less radioactive. There is this difference between radiant energy and the energy of the *x*-ray: Radium induces an activity which persists, while the activity of the *x*-ray ceases on the removal of the rays. Lord Kelvin is quoted as saying that the discovery of the Becquerel rays from radium and other such substances has placed the first question mark against the principle of the conservation of energy, which has hitherto been supposed to be an incontrovertible fact in science.

RADIUM IN MEDICINE.

Sir Henry Crookes has carried out some experiments which show that radium has marked bactericidal properties. Caspari exposed cultures of the *Micrococcus prodigiosus* to a preparation of radium which destroyed the germs in three hours. Soddy of England has suggested the inhalations of the emanations of radium for consumption. Tracy of New York has very recently carried out some experiments in induced radioactivity. He finds a normal salt solution one of the best media for receiving this radioactivity. This property suggests the hope of finding an effective way of using it internally. A spray of the normal salt solution impregnated with radium will leave the mucous membranes of the nose and throat covered with this radioactive matter, which is antiseptic to a marked degree. It may turn out to have a powerful effect in the relief of cancer of the stomach. Surgical dressings may also be sprayed with radioactive salt solution.

It has already been clearly proven that radium rays have a very decided influence in inhibiting the progress of diseased tissue. These emanations of radium seem to offer some advantages over the *x*-ray in the treatment of deep-seated cancer. The *x*-ray has not been a success in this affection. Owing to the penetrating power

of the emanations of radium, it will be possible to apply these rays to the seat of the disease. I have found reports of the following cases:

MacIntire of Glasgow reports two cases of lupus—one of the hand, one of the nostril and nose—both of which were healed by the radium ray. MacIntire also reports favorably of its use in rodent ulcer.

Gussenbauer of Vienna reports good results and some cures in twenty cases of cancer treated by him.

Lunder of Berlin claims to have had good results in cases of blindness from the stimulating effect of the radiations on the eye. It may be that this new agent will prove valuable in these hopeless cases of optic nerve atrophy.

Tracy also reports a case of epithelioma improving under the influence of a tube of radium of 300,000 activity containing ten milligrams. The same physician has also tried this tube on a case of optic atrophy in a man 52 years old. Some improvement has taken place, though the patient is still under treatment. Dr. Blandameur, using a tube of radium with an activity of 5,200, reports the cure of lupus.

Dr. Meyer and William J. Hammer improved a large axillary cancer with radium of 300,000 activity. The exposure was one minute daily. While this case was incurable, the cancer grew smaller and less painful under the rays.

Dr. A. H. Smith reports having seen in a European clinic a rodent ulcer perfectly healed after five exposures, though this ulcer had been treated by the *x*-ray without benefit.

The place of this new element as a therapeutic agent has yet to be determined. At present the cost of it and its scarcity prevent it coming into general use. But if it can be found even in limited quantities, it will have this advantage of the *x*-ray: It will require no costly apparatus—merely a test tube. It will be free from expense of wear and tear. It can also be carried anywhere for use.

This is a newly discovered force. It will have powers for evil as well as good. Before long the charlatan will be exploiting its wonderful powers in the daily press at so much per line.

The investigations of this substance have only begun. Every week adds some new report to its wonders. It will not prove to be the panacea for all human ills—enough trial has been made to show this. It will have a specific limited field of action. First reports are sometimes flattering. Further trials must be made. But no new substance has been discovered during the history of the human race around which so much mystery clings as to this new element—radium. The principles of the conservation of energy, and the law of gravitation itself may need some changes in our statements of them, as a result of the properties found to reside in this particle of matter. It occupies almost the same place in physics that a biologic discovery would occupy in biology if it should apparently offer some serious objections to the generally accepted theory of the origin of species.

It is impossible to note in a subject like this, those to whom we are indebted for the work they have done; but acknowledgment is here made to Edgar L. Larkin, author of "Radiant Energy" for use made especially of his chapters on radiant energy and spectrum analysis; also to Prof. Oliver Lodge, Dr. S. G. Tracy, William J. Hammer on "Radium and Radioactive Substances," and John U. Lloyd.

THE CONFLICTING CLAIMS OF GENERAL EDUCATION AND PROFESSIONAL EDUCATION.*

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For the last fifty years there has been a tendency to increase the length of time devoted to professional training. This tendency has not been confined to medicine or law, or to the so-called learned professions as a group. It is equally conspicuous in the various lines of engineering and technology. It is manifest in those departments of school work which fit the boy for trade or for commerce. In every sphere of human activity modern scientific studies have made their influence felt. In every sphere, therefore, the practitioner who is familiar with the methods and processes of his science—be it physiology or mathematics, physics or economics—has an advantage over his competitor who knows only those rules of practice which can be picked up in the office or the shop.

But there are some respects in which this tendency has been more strongly felt in medicine than in any other calling, for a physician needs to be trained in more kinds of scientific study than almost any other man in the world. He must know something of physics and much of chemistry; he must know something of morphology and much of physiology. Each advance in any of these sciences increases the importance of the preliminary training which is essential to the successful practice of the arts of medicine and of surgery and the length of time which must be devoted thereto. If we add to the time thus consumed in the study of science the time which is involved in learning the practice of those arts—whether in the higher classes of the medical school or in the hospital experience which should follow—the period of technical training becomes so long that it is a burden to all men, and an almost insupportable burden to those who are poor. And if, in addition to this, we urge that the student of medicine should previously have completed a college course of the old type, we seem to postpone indefinitely his chance to become an independent practitioner and to have the comforts of a home and a family of his own.

Under such circumstances there arises an almost inevitable conflict between the claims of general education, as represented by the college, and the claims of technical education, as represented by the medical school, and in less degree also by schools of law, or theology or engineering. This conflict involves so many different issues and deals with matters of so much perplexity that I have felt some hesitation in offering an address on this subject which shall set forth the claims of the college. But from all that I have heard of this body, I believe that the very difficulties of the case will cause its members to welcome a presentation of a side of the argument different from that which is perhaps more habitually brought before their consideration.

As a first step in our analysis of the problem, let us try to get clearly before our minds exactly what we are talking about. What is the difference between general education and technical education? What is the distinction between the college and the professional school or group of professional schools? Most people would say that it was a difference in the nature of the studies

* Address before the Medical Society of the State of New York, at Albany, Jan. 26, 1904.

pursued. Fifty years ago that would have been largely true. To-day it is not true. Fifty years ago the college taught a curriculum of classics and mathematics, with some metaphysics and a little very elementary science and history, which was supposed to give a foundation of general knowledge for all men; while the professional schools, whether of law or medicine or theology, were occupied with teaching the details of practice—to expound a text, to collect a note, or to write a prescription more or less suited to the occasion in hand. To-day things have changed at both ends. The professional schools no longer occupy themselves solely or chiefly with teaching the practice of their several arts, but lay at least equal stress on the training in the sciences which are at the foundation of those arts. The colleges no longer compel their men to go through a certain curriculum; but they offer a choice of courses suitable to the tastes and abilities of different individuals, from which each can choose that which best meets his wants. Within the limits of a college course the man who would be an engineer can gain an excellent knowledge of mechanics; he who would become a lawyer can learn the fundamental elements of legal theory; while he whose tastes lead him to the study of medicine can master not only the principles but the practice of chemistry, and can familiarize himself with anatomy and physiology and physics, and all those various sciences which form the foundation of successful medical study.

What, then, is the difference between a college and a group of professional schools? What, then, determines whether we should advise the student to obtain these requirements in the one institution or in the other?

The difference, I take it, is not in the studies themselves, but in the surroundings under which they are pursued. The distinction is not in the things taught, but in the ethical atmosphere in which they are learned. The college student pursues his investigations amid a set of associations which bring him into contact with non-professional life on as many sides as possible. The student in the professional school, on the other hand, is in an atmosphere which reduces these outside influences to a minimum and encourages him to narrow his efforts on the work immediately in hand. The college course gives a man breadth of sympathy; but with all except the best men, this breadth is accompanied by a sacrifice of intensity of application. The professional course secures the intensity, but with a corresponding danger of sacrifice of breadth. Which of these alternatives shall we choose? Which of these ends shall we pursue to the comparative disregard of the other?

The tendency of late years has been to choose the second alternative—to regard intensity of application as the vitally important thing to be secured, and to look with distrust, if not with absolute dislike, on scientific requirements which have been obtained in the broader but less exacting atmosphere of collegiate study. Indeed, this attitude has in some instances gone beyond mere distrust or dislike. A man who has acquired his chemistry or his anatomy outside of the medical school is liable to a summary rejection of his claim that this knowledge has in any wise advanced him toward the practice of his profession. Speaking broadly, a student's class rating in our medical schools depends not on his amount of knowledge, but on the time that he has spent in some medical school in acquiring that knowledge—the duration of the period during which he has breathed the professional atmosphere. We do not go so far as the legal profession does in England, where admission to the bar is based on the number of dinners that a man has eaten at a certain place; but the difference is one of degree rather than of kind.

Now it is easy to see the reasons which have led to the adoption of this general policy. We want to have our professional men trained in habits of intense application. This will save their time, will make their work more efficient, and will fit them for the practice of their profession more speedily than would be possible in any other way. What I wish to point out is that this gain is attended with certain serious dangers of loss to the student himself, to the cause of scientific progress, and to the influence of the medical profession as a whole; and that any consideration of the subject which looks only at the gain and fails to notice the loss is an imperfect and somewhat dangerous one.

The first of these dangers is that of commercialism. To this danger the student who does all his scientific study in an exclusively professional atmosphere is often very seriously exposed. A professional school is filled with men who are anxious to make a living, and who look on their scientific study as a means of enabling them to make a living better than they could without it. In fact, the special intensity of their effort in the early years of professional study is largely due to this commercial motive. There are some men to whom this will do no particular harm. There are others to whom it does very great harm indeed. With such men science, instead of being regarded in her proper light, as an agent of service to society, becomes a mere handmaiden of business. A man who looks at medicine in this way will probably make more money than if he looked at it in any other way; but I am sure that the members of this audience would regard this monetary standard as a very ignoble measure of the aims of the medical profession, and would deprecate any change in the system of education which would give increased prominence to this element of success in the mind of the young man of twenty who is beginning his scientific studies and forming his scientific ideals.

The evil effect of such a perversion of standards does not stop short with the individual student. It is bound to show itself in the methods of the profession as a whole. It will result in an undue exaltation of those elements of study and practice which form the basis for triumphs of technical skill. It is, perhaps, presumptuous for a layman to form a judgment on matters like this; and yet I can not forbear saying that the temper of many of the students and of some of the instructors in our medical schools is to-day rather unfavorable to the study of physiology. Anatomy, which is in many ways an exact science already highly developed, they pursue to the utmost, and make it a basis of successful surgery. Certain parts of pathology, in like manner, are made a basis of successful medical practice; but general physiology, by comparison, at least, is neglected. In such schools —and there are many of them—the students are led to use the results of the past to cure the individuals who are afflicted with certain definite diseases; but they are not in corresponding degree led to make scientific progress in those fields which to-day are difficult and doubtful, and give no assurance of commercial return to the investigator, but whose very doubt and difficulty make investigation more necessary and give greatest possibility of service to future generations.

And, apart from its direct effect on the physician himself, this separation of the scientific studies of the

medical profession from those of other men has, I think, an indirect effect adverse to the political and moral influence of that profession in the community as a whole. It tends in some degree to make the physicians a guild or trades union, apart from the rest of society. The old-fashioned country practitioner, who had learned nearly all his medicine from contact with his fellow-men, was extremely defective in his scientific training; but he was a power in the community, and knew how to influence the conduct and life of that community. His successor to-day knows more of science, but he does not always know as well how to make that scientific knowledge a stimulus to those about him.

We can, perhaps, understand the real nature of the change better if we look outside of the medical profession and see how a similar change has taken place in the aims of the lawyer in the progress of the law and in the influence of the legal profession in the community. The lawyers of to-day are far better trained in the theory of their profession than was the case a century or a half century ago. They make fewer mistakes. They know more accurately how to adapt means to ends. But there has been an increased narrowing of the standards of success, which gives us more men with large incomes, but fewer Lincolns and Websters and Calhouns. There is an increased ability to take advantage of technical details in advising a client to avoid a lawsuit, but a diminished readiness to adapt the law to new conditions, commercial and social, in the way that the English judges of 1700 or the American judges of 1800 were ready to adapt it. There is, in short, a separation of interests between the legal profession and the community in which the lawyer lives, which stands in the way of the rendering of that public service which the profession should be competent to perform.

Is there any remedy for all this? I believe that there is, and that it lies in the direction of encouraging men to do the preliminary work of preparation for their several callings while they are yet in the broader atmosphere of the college, rather than in the narrower atmosphere of the professional schools. Some sacrifice of intensity of application this doubtless will involve; but I believe that any loss from this cause will be more than compensated by the increased gain in sympathy and enjoyment, in the spirit of progress and in the power of using such professional work for the benefit of a man's fellows, which will accrue from this change. I would not abate one jot of the strictness of our requirement of scientific knowledge as a preliminary in professional study; but I would welcome that knowledge, no matter where it was acquired. I would hold that if a man really had the necessary training in chemistry or anatomy, he would make a better physician instead of a worse one if he had obtained it outside of the limits of the professional school. Instead of discouraging men from beginning their scientific studies before they enter a professional school—which is the net result of our present somewhat exclusive policy—I would stimulate such study in the colleges, giving fair recognition to its results. I would encourage a man to begin his scientific specialization at as early a period as possible and to defer his ethical specialization until as late a period as possible. The sooner a man's brain begins to turn to his lifework the better; but the later a man's horizon tends to be narrowed to the sphere of his lifework the better also.

I believe, therefore, that the true policy is not a shortening of the college course and an attempt to make it a time of intellectual eclecticism, if not of intellectual dissipation; but an inclusion within that college course of all the scientific studies which it can be made to contain, and the fullest recognition by our various professions and professional schools of the results of such study when obtained in the college atmosphere. I believe that in this way we can best solve the problem of training men for the duties of their several professions, without untraining them for the wider duties of scientific progress and of American citizenship. I believe that in this age, more than in all others, we need to emphasize the importance of those conditions in education which make for catholicity of sympathy, for wide acquaintance with all kinds of men, and for broad range of vision, both present and future. I plead not for any lowering of professional standards or for any lessening of intensity of requirements; but for the recognition of the great fact that our engineers and our lawyers, our ministers and our physicians, must be men first and technologists afterwards—and that any true system of professional education should find a place for helping men to broaden their mental and moral horizon, even while they are learning to concentrate their vision on those special lines of human activity with whose investigation they are charged.

The Cultivation of Medicinal Plants.—The *American Journal of Pharmacy* for December contains an article by Dr. Kraemer, the editor, on "The Conservation and Cultivation of Medicinal Plants," in which he predicts an early extermination of the principal medicinal plants of this country unless measures are taken to protect and to cultivate them. Certain well-known plants, as spigelia, serpentaria and senega, are already becoming scarce, whereas in Linne's time they were found in abundance in Maryland and other Atlantic states. It is well known that some plants have been improved by cultivation, and it is reasonably to be supposed that all can be when the peculiar requirements of each have been ascertained. Kraemer urges a study of these plants in their natural surroundings that they may be successfully cultivated and conserved. Many of the medicinal plants now in use are being cultivated in this country. It is stated that 40,000,000 pounds of peppermint are produced annually near Kalamazoo, Mich. Castor beans, from which castor oil is obtained, are raised in the west and middle states. Valerian is produced in Vermont. *Digitalis purpurea*, *Atropa belladonna*, *Sanguinaria canadensis*, *Cimicifuga racemosa* and many equally valuable plants have been raised experimentally in this country and, in Kraemer's opinion, could be grown successfully with the proper cultivation. A number of native medicinal plants which still grow here in abundance are named. The more common ones mentioned are couch grass (*Agropyrum repens*), marshmallow (*Althæa officinalis*), stramonium leaf and seed (*Datura stramonium*), grindelia (*Grindelia robusta*), hydrastis (*Hydrastis canadensis*), mandrake (*Podophyllum peltatum*), and American hellebore (*Veratrum viride*). Kraemer urges the further cultivation of certain plants which have been introduced into this country and grown here to some extent, such as senna (*Cassia acutifolia*), colocynth (*Citrellus colocynthis*), gentian (*Gentiana lutea*), poppy (*Papavera somniferum*), etc. He believes that three-fourths of all medicinal plants are grown either wild or in cultivation in this country, and that fully one-half of the remaining fourth could be successfully raised here. Americans must realize the necessity of protecting their forests and plants, and must consider their care and preservation a duty both to themselves and to future generations.

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THE NEED OF A UNIFORM STANDARD FOR DEPARTMENTS OF HEALTH.

A list of questions was sent recently to the departments of health of various representative American cities. These inquiries related to the reporting and isolation of contagious diseases and to subsequent disinfection. The answers received from sixteen cities reveal a quite surprising divergence of view as to what ailments are included in the class of contagious or infectious diseases and as to what are considered adequate measures for protecting the community. In what follows it will be understood that no exact statements are intended as to the procedure of all American cities. The instances mentioned are given simply to show the wide divergence on essential points found among certain typical cities. The answers received from these cities were necessarily brief, and access to the various sanitary codes was practicable in only a few cases, so that in some instances only general statements concerning the methods can be made. In others the details can be given more fully.

All the cities answering require the reporting of smallpox, diphtheria and scarlet fever, but there uniformity ceases. Baltimore, Philadelphia, St. Louis, Providence and Rochester are not content with the reporting of diphtheria alone, but very properly insist on the reporting of all cases of membranous croup. Inasmuch as the majority of these cases are due to infection by the Klebs-Loeffler bacillus, it is generally recognized that the two diseases are practically identical, yet so long as the reporting of membranous croup is not required, it affords an easy way of relieving the family from the annoyance of placarding and isolation. Baltimore, Chicago and Philadelphia are the only cities in the list requiring specifically the reporting of varioloid, yet there is the same reason for reporting varioloid as for reporting membranous croup. Philadelphia, indeed, makes a special point of reporting chicken-pox, and claims that several cases of smallpox have been thus discovered. Other cities which require chicken-pox to be reported are Baltimore, St. Louis, San Francisco, Salt Lake City and Rochester. Measles and whooping cough are communicable diseases, yet among the cities answering only Baltimore, Salt Lake City and St. Louis mention both, while San Francisco and Providence mention measles only. Cholera and typhoid fever are diseases which, though only indirectly communicable, are peculiarly amenable to control by sanitary measures, and it would, therefore, seem highly advisable that these diseases should be included in the list for compulsory reporting. It is easy to understand why cholera is omitted, as it is so long since there has been an alarming outbreak, but typhoid is endemic in many of our large cities, and there are few diseases which departments of health, wherever they are free to exercise their legitimate functions, could so successfully combat. Chicago, Baltimore, San Francisco, Providence, Salt Lake City, Philadelphia, St. Louis and Rochester specifically mention that the reporting of typhoid is required.

It is easy to see why yellow fever should be listed as it is in seaport towns and not in northern inland cities, but it is not easy to understand the varying attitude toward other diseases, notably epidemic cerebrospinal meningitis, erysipelas and puerperal fever. Philadelphia, Salt Lake City and St. Louis require the first disease to be reported, and St. Louis and Salt Lake City go so far as to insist on placarding, although St. Louis does not placard measles or chicken-pox. St. Louis and Rochester seem to be the only ones which require the reporting of erysipelas and puerperal fever. Philadelphia stands alone in regarding relapsing fever as a dangerous, communicable disease which must be reported. It is singular, in view of the fact that cases of leprosy occur every now and then throughout the country, that Philadelphia is apparently the only city requiring it to be reported. When we remember the recent conflict between the Federal and local authorities as to the existence of bubonic plague along the Pacific coast, it is noteworthy that San Francisco does not mention this disease among those which must be reported to the health department, although Salt Lake City places it on the list.

There is compulsory reporting of tuberculosis in New York, Boston, San Francisco, Baltimore, Rochester, Providence, Atlanta and Louisville. In the reporting of tuberculosis, departments of health often contend with opposition on the part of the medical profession, and the physician in turn must contend with strong opposition on the part of his patients and their families.

The requirements of the different departments as to placarding and isolation vary widely. In the case of Baltimore, placarding and absolute isolation are apparently required for all the severer infectious diseases and also for whooping cough, mumps, typhoid fever, consumption and chicken-pox. Des Moines, New Haven and Louisville assert that they enforce placarding and complete isolation for "all contagious diseases." Chicago's sanitary code requires placarding for smallpox, scarlet fever or any "contagious, infectious, pestilential or epidemic disease." The code of Salt Lake City is extremely strict, and the printed rules require not only the placarding for such a disease as epidemic cerebrospinal meningitis, but make it unlawful for any person in the house with such a case to leave the house without a written permit from the board of health. Of course,

such over-strict requirements are liable to defeat themselves. On the other hand, certain cities require only the placarding of smallpox, diphtheria and scarlet fever. Such are Boston, Detroit, Minneapolis, Atlanta, St. Paul and Providence. Rochester adds measles.

The degree of isolation apparently required varies widely. As instances may be given the Salt Lake City rule quoted above, which applies to all contagious diseases, and the following answer given by the Providence board, applying to all reportable diseases: "Not so strict as formerly. Children in family kept out of school and advised to stay on the premises. Other children in house usually allowed to go to school. Wage earners usually allowed to go to work." We suspect that whatever the requirements by official rules may be, the Rochester answer comes near representing the general practice. It is as follows: "We do not require isolation from other members of the family, because we believe it can not be enforced in practice."

There is room for difference of opinion regarding the value of placarding in the prevention of the spread of communicable diseases, but if it is, as seems to be the case, generally accepted as a valuable procedure, then it would certainly seem possible in the present state of medical science to arrive at a more uniform standard of application than is shown by these answers. In practice, some towns having the most stringent rules leave much to the discretion of officers. Philadelphia and Chicago, for instance, leave placarding to the discretion of inspectors and attending physicians, although the Chicago code especially is most sweeping and mandatory on this point.

As a usual thing, either sulphur or formaldehyd, or both, are stated to be the disinfecting agents used, but even here a striking diversity of opinion is shown. One reply states that "the work of the department in disinfection with formaldehyd gas has been exceedingly successful." Another reply says: "All forms of formaldehyd disinfection are a delusion and a snare."

There are, of course, still many obscure points in the etiology of contagious diseases, but the mode of transmission of most of these diseases is fairly well understood. On the other hand, as a matter of administration, it is true that many non-medical considerations affect the degree to which the sanitary code is enforced in each city. If the code gives the department of health strict rules and large discretionary powers, the enforcement is necessarily difficult and obstructed by considerations outside of those purely medical, while, if the rules are very lax, the enforcement will hardly be vigorous.

We would respectfully suggest that no subject could more fitly engage the attention of the Section on Hygiene and Sanitary Science of the American Medical Association than this of securing a scientific and practicable standard for the control of communicable diseases by municipal departments of health.

THE INFLUENCE OF SODIUM CHLORID AND DECHLORIDATION ON CARDIAC AND OTHER DROPSIES.

The influence of sodium chlorid on the dropsies attending various forms of nephritis was brought to the attention of the medical world in a paper by F. Widal and A. Javal,[1] which has been noticed[2] in these columns. Since then the study of the fate of sodium chlorid in the body and the influence of that salt on dropsies and edemas has been diligently pursued by the French clinicians. According to the investigations of R. Marie,[3] it appears that when sodium chlorid is not eliminated it does not remain in the blood, but passes into the interstitial circulation, where it reaches a fixed percentage, usually about six grams to the thousand. When the retention is increased, the strength of the plasma does not change, but the tissues become more hydrated, and when the retention becomes very marked, the interstitial fluid becomes greatly increased and edema results. All the retained chlorid is not contained in the interstitial plasma, however, and Marie believes there are two stages in the retention: (1) that of fixed chlorid, in which the chlorids are contained in the tissues or organs, and (2) that of free or circulating chlorid, in which the chlorids are in the interstitial circulation. The variations of the latter chlorid are indicated by variations in the weight of the patient. It would seem, then, that depriving the edematous patient of chlorids would result in a diminution of his edema. The work of Widal and Javal seems to confirm this theory, insofar as the edema of nephritis is concerned. It has also been shown that dechloridation has an influence on the amount of albumin in the urine in these cases. Hallion and Carrion[4] suggest that the influence of a chlorid-free diet on albuminuria may be accounted for (1) by a modification of the osmotic tension of the glomerular secretion, as advanced by Castaigne and Rathery,[5] and (2) by a modification of the albumin of the blood, due to the proportion of chlorids which the organism contains. These authors object to the former theory and approve of the latter.

While dechloridation has been found of decided benefit in cases of edema complicating nephritis, no such striking results have been observed in cases of edema complicating cardiac disease. Widal, Froin and Digne[6] have studied the effects of dechloridation and of the administration of chlorids in nine patients suffering from cardiac affections, with more or less pronounced edema of the extremities. They have found that in three of these patients, in spite of increasing alimentary chloridation, the edema and the body weight diminished progressively. On the other hand, three other patients increased in weight when given ten grams of sodium chlorid daily with their diet. Again, in four patients dechloridation

1. Presse Méd. de Paris, No. 80, 1903.
2. THE JOURNAL A. M. A., Oct. 31, 1903, p. 1092.
3. Comptes Rendus de la Soc. de Biol., Nov. 20, 1903.
4. Ibid., Nov. 20, 1903.
5. Sem. Méd., Sept. 23, 1903.
6. Ibid., Nov. 18, and Bull. et. Mem. Soc. Méd. des Hôp., Nov. 19, 1903.

had no influence on the weight, or at most produced slight reductions only. In spite of these results, the authors conclude that a certain advantage is to be gained in cardiacs by prescribing a diet composed of meat, potatoes, butter and bread, all without salt, because such diet seems to prevent the increase of an existing edema. Vaquez and Laubry,[6] on the other hand, have satisfied themselves that a diet rich in sodium chlorid is dangerous for patients with cardiac disease because it renders them more liable to general and local disorders, such as dyspnea, insomnia, vomiting and albuminuria. Bergé[7] reports a case of arteriosclerotic nephritis with aortic insufficiency, which is somewhat illustrative of the last statement. Bergé had given his patient subcutaneous injections of normal saline solution once a week for eighteen weeks without harmful effect. Some months later a second series of injections was begun, and after the third administration of 200 c.c., the patient, developed an attack of pulmonary edema. Vaquez and Laubry believe that dechloridation of the diet is useless when a cardiac lesion is compensated; but when there is transitory asystole this form of diet is a useful transition between an absolute milk diet and a normal diet.

Chauffard[6] put a patient with atrophic cirrhosis of the liver, ascites and edema of the lower extremities, scrotum and lumbar region on a dechlorized diet. While the ascites was not benefited, the edema disappeared after paracentesis abdominis and did not reappear, although the ascites reaccumulated more rapidly than it had before when ten grams of sodium chlorid were administered daily with the food. Chauffard believes that if the dechloridation of the diet does such a condition no positive good, the administration of large quantities of sodium chlorid may do positive harm.

It would seem from these recorded experiences that a chlorid-free diet may prove of value in the hands of the internist in certain cases of cardiac disease complicated with dropsy; if not as a curative measure, at least as a prophylactic method directed against some of the more serious terminal accidents of this disease.

LYMPHOTOXEMIA, THE STATUS LYMPHATICUS AND ALLIED DISORDERS.

Observations of a relationship between spontaneous sudden death and enlargement of the thymus, extended by Grawitz, Paltauf and others to enlargement of other lymphoid tissues as well, have demonstrated a condition which, although still shrouded in obscurity, has acquired a distinct name and fairly definite anatomy. Death is so sudden in some instances that the only symptoms observed are associated with cardiac or respiratory failure; in others death is practically instantaneous and observation of symptoms is impossible.

Although chiefly occurring in children with rickets, infantile eclampsia, tetany and the so-called thymic asthma, the anatomic evidences of lymphatism or status lymphaticus have been found in adults in exophthalmic goiter, idiopathic epilepsy, and in cases where sudden death has followed trivial physical stimuli. Numerous observations have concerned death from anesthesia in both adults and children and from the use of all forms of general anesthetics. That death in these cases may result from or be favored by the enlarged thymus, seems likely from a few observations: The trachea has been found with its lumen all but obliterated; in another instance it displayed a marked "saber-sheath" malformation; in a report by Kohn, the aorta was found enveloped by the overgrown thymus and the heart both hypertrophied and dilated; in some instances the fatal ending has been attributed to pressure on the vagi. The anatomic position of the thymus has naturally suggested its causative connection with dyspnea and laryngeal spasms, seen especially in infants, but the failure to find any notable constant hyperplasia has gradually led to the abandonment of this view.

The recent suggestion by Blumer[1] that death in cases of lymphatism is due to a cytotoxin, possesses many features of interest. He was led to this assumption by finding in the 9 cases studied changes very similar to those observed in animals injected with alien serum containing—in the nomenclature of the Ehrlich theory of immunity—amboceptors specific for various lymphoid tissues. If the increased production of lymphoid tissue in the pharyngeal, thoracic and abdominal lymph glands and in the intestine, spleen and thymus, takes place from the action of a toxin, and is, therefore, in a measure an adaptive process and in accord with Weigert's law of degeneration and proliferation, the sudden and hitherto unexplained spontaneous death in these cases may be due to changes caused elsewhere in other tissues by the toxin.

There is every reason to believe that molecular and chemical alterations may occur in disease for which we are at present unable to demonstrate corresponding morphologic changes. On the other hand, improved technic and an increasing thoroughness are constantly revealing structural modifications in diseases of the so-called "functional" type. That these cases of lymphatism will show on further research variations of structure explaining the abrupt and unexpected death, may be confidently expected. Some hint of this is afforded by the recent description by Peters[2] of the changes in tetany, a disease which may be but a symptom-complex of lymphatism or lymphotoxemia. He found, in 8 cases, an external hemorrhagic pachymeningitis of the spinal cord with inflammatory changes in the spinal ganglia and both motor and sensory roots. Details of the condition of the lymphoid organs and tissues in these cases of tetany are not described, and in the contribution by Blumer there is no mention of examination of the nervous system. During tetany, laryngeal spasms occur,

7. Bull. et Mem. Soc. Méd. des Hôp., Nov. 19, 1903.

1. Bull. of the Johns Hop. Hosp., 1903, xiv, 270.
2. Deut. Arch. f. klin. Med., 1903, lxxvii, 69.

and several of the infants examined by Peters exhibited such symptoms. Death occurred in one of the 8 suddenly during such an attack. The words of Ohlmacher, whose investigations established the occurrence of status lymphaticus in idiopathic grand mal, are worthy of repetition: "The tendency to bring to a common basis whose essential expression is the lymphatic constitution such obscure neuroses as tetany, eclampsia of infancy, laryngeal spasm and mors thymicum, can not be ignored." With the demonstration of changes characteristic of such diverse clinical phenomena, perhaps the necessity to distinguish some of them as separate diseases may disappear. The cytotoxins instrumental in causing hyperplasia of the lymphoid tissues in some forms of the status lymphaticus may be different from those operative in others; they may be bacteriogenic in one and of somatic origin in another. Estimation of the number and variety of the leucocytes in the circulating blood in diseases with which the lymphatic constitution is associated, is called for, and also of the lytic properties of the sera of these diseases for human leucocytes and lymphoid tissues. Indeed, the problems for research in these little known affections are, to a large degree, present also in the more familiar and kindred diseases—splenic anemia, leukemia (especially the acute form), Hodgkins' disease and multiple myelomas, since these also may be caused by the actions of toxins. Not the least needed is orderly and skillful examinations of the nervous system to determine if possible some explanation of their high mortality.

AN OBJECTION TO SMOKELESS POWDER.

The object of many of the devices of warfare is to inflict the greatest damage to the enemy at the least cost to the other side, and smokeless powder is used to prevent concealing some portions of an opposing body. Attention has recently been called to an interesting aspect of the use of smokeless powder in naval warfare. In a target practice on a warship the wind blew the smoke and gases following the discharge of the guns back into the turret, incapacitating some of the gunners. The symptoms were convulsions, labored respiration, small and irregular pulse, feeble and tremulous heart action, headache, loss of consciousness, etc., and were ascribed in a large measure to the nitric and nitrous products created by the combustion. It, therefore, becomes in part a problem of ventilation. The ship crews must be protected from these fumes by proper devices. Torel,[1] writing on this subject, calls attention to the fact that under certain circumstances smokeless powder may be more of injury than of benefit to the ship crew using it.

THE VALUE OF FRESH AIR.

If the present popular crusade against tuberculosis should fail in its purpose and "the great white plague" still continue to be more or less an important factor in the mortality, which we can not reduce beyond a certain definite point, it will have nevertheless worked out an immense amount of good in the mere fact that it has educated the people to the value of fresh air. In our northern climate, the changeable seasons and the necessity of guarding against extremes of temperature make us too apt to neglect ventilation both in public and private buildings. In the colder season Nature helps us to some extent against our will, as natural ventilation is then more active through entrances that can not be altogether obliterated by artificial means. Our buildings that are heated by grates, furnaces or stoves, when properly constructed and with air inlets suitably arranged, partly meet the conditions in supplying fresh oxygen to the inmates, though they are far short of sanatorium ideals. In our crowded city flats and tenements, however, the evil of vitiated atmosphere with its germs and other impurities forms one of the most serious of the disease-breeding factors in our midst. The tuberculosis crusade shows us that open windows even in our northern climate are not unendurable by invalids, to say nothing of healthy people, and that by coming back to more natural conditions we can escape many of the evils that have grown up about us. In the course of civilization man has gotten very far away from Nature—part of this of necessity and part from luxurious indulgence and the neglect of proper elements of health. We would be a hardier race if we coddled ourselves less, and the worst form of coddling from which we suffer is in our overheated and ill-ventilated apartments. Steam and hot-water heated flats, with storm windows and rubber-stripped doorways, are direct possibilities of lung and other infection. The awakening of the people to this fact, as well as to the dangers of crowded assembly rooms, street cars and other conveyances where fresh air is a dreaded and carefully avoided intruder, is an excellent thing.

SUPRARENAL GRAFTING.

The hopelessness of Addison's disease makes of great interest any procedure that may be suggested for its relief. Some years ago Oesterreich, Professor Virchow's assistant at Berlin, reported a case in which the recognition of characteristic pigmentation, with lowered blood pressure, led to a suspicion of incipient Addison's disease, and operation with the removal of some portions of the suprarenals undergoing tuberculous degeneration was followed by relief. The success in this case, however, must be looked on as a happy accident rather than as a precedent to be followed. The difficulties in making a positive diagnosis of incipient Addison's disease are so great and the operation so grave that, except under the most favorable circumstances, a surgeon would hesitate to operate. A suggestion was made at the last meeting of the Society for Experimental Biology and Medicine,[1] which calls attention to the possibility of relief at more advanced stages of the disease when diagnosis has become more certain. Dr. Meltzer presented a case in which one suprarenal was removed and grafted into an incision in the corresponding kidney. When the other suprarenal was removed

1. Archives de Médicine Navale, abstracted in the Jour. of the Assn. of Military Surgeons, September, 1903.

1. Science, Jan. 15, and Am. Med., Jan. 17, 1904.

entirely, eighty-six days later, the animal survived and was apparently normal for twenty-one days, after which it was killed for examination. It is not surprising to find that the suprarenal may continue to live in the midst of kidney tissue, as portions of suprarenals are not infrequently found in the cortex of the kidney and are sometimes the source of malignant tumors—the so-called hypernephroma, which is usually fatal. It would seem, therefore, that this suggestive investigation might very well prove the basis for a surgical therapeutic measure that would at least prolong the life of some of our hopeless cases of Addison's disease. In animals, at least, the medullar portion of the grafted suprarenal seems to persist very well and to obtain a good blood supply.

THE REMOTE EFFECTS OF HEAD INJURIES.

It has long been recognized that injuries to the head, generally with but sometimes without fracture, may be responsible for brain abscesses appearing weeks, months or even years after the injury. The rôle of such injuries in the production of neuroses and psychoses has been universally recognized and in some quarters greatly exaggerated. The physician who is not in touch with modern psychiatry is often too willing to assure the relatives of the insane patient of the absence of inherited predisposition and to place the blame on some injury that no one had thought of for years. It is still unsettled whether injuries to the head can cause brain tumors, but a history of trauma is obtained in a small percentage of cases, particularly of sarcoma and glioma. Another post-traumatic affection has created considerable controversy for some years. In 1891 Bollinger first called attention to the occurrence of cerebral hemorrhage weeks or months after a head injury. Recently Stadelmann[1] has contributed several convincing cases, and Harbitz[2] of Christiania has reviewed the whole subject in a lucid manner. As an instance of these so-called *"traumatische Spätapoplexien"* one of Stadelmann's cases may be cited. A working man, 29 years old, received a blow in the right parietal region which rendered him momentarily unconscious, but he was able to return to work in a few days. Four weeks later he was suddenly taken with convulsions, commencing in the left arm, and became unconscious. He died six days later, or thirty-four days after the injury. The autopsy revealed clotted blood in the leptomeninx of the right fossa Sylvii, with a small amount of softened brain substance underneath, and a clot the size of a pigeon's egg deep down in the right posterior central convolution; the surrounding brain substance was soft and edematous. There was also a focus of softening containing blood clots in the left frontal lobe. The course of events is supposed to be as follows: Trauma causes capillary hemorrhages, frequently surrounded by minute foci of softening, generally located in the surface of the brain beneath the contused part, but frequently also deep down around the ventricles, or in the portion of the brain diametrically opposite the injured portion. The changes produce a local circulatory disturbance causing edema, and this, together with the accompanying softening, causes a diminution in the pressure normally exerted from without on the vessel wall, and rupture is the result, occurring either spontaneously or from some trivial cause, such as sneezing, laughing, a heavy meal or emotion. Naturally in a given case one must be extremely cautious in deciding a hemorrhage to be of this kind. Stadelmann formulated the following conditions: 1. The patient must formerly have been in good health, not syphilitic, alcoholic, nephritic, or the victim of heart disease or arteriosclerosis. 2. The trauma must have been considerable, but need not necessarily have caused loss of consciousness. 3. The symptoms of the vascular and cerebral changes must be of distinct evolution and come on within a reasonable time. If years have elapsed, it will be practically impossible to establish a connection. The subject is worthy of attention, particularly on account of its obvious medicolegal importance. It is highly desirable that all such cases should come to autopsy, and a careful and critical comparison be made between the clinical and postmortem findings.

1. Deutsche med. Wochenschr., Nos. 6 and 7, 1903.
2. Norsk Magasin for Laegevidenskaben, 1903, p. 663.

LIFE-INSURANCE REJECTIONS.

A western contemporary[1] has protested with some vehemence against the custom among life insurance companies of exchanging lists of rejected applicants. The editorial refers to the condition as being "simply intolerable and outrageous." With this view the opinion of the *St. Paul Medical Journal*[2] is distinctly at variance. This journal calls attention to the fact that this is a beneficent provision to protect policy holders from deterioration of the average risk. In other words, if such a custom did not exist, it would be far easier than it now is, for persons who have been rejected on good and sufficient reasons, to secure insurance in other companies by skillfully obscuring the defect in family history, personal history, or physical condition, as the case might be, which had been the cause of the rejection elsewhere. Every life-insurance examiner is familiar with the endeavor of rejected applicants to remove the grounds of their disability. It may be, as has been charged, that some insurance companies are satisfied to learn that the applicant has been rejected, and will then give him no further consideration. Reference is made to a man's being put on the "blacklist." Such a one is perhaps unable to secure insurance and yet lives to a ripe old age. MacPhail[3] has recently investigated a large number of rejected candidates, and finds their length of life but little below the average life of accepted applicants. He ascribes this fact to the applicant having been warned of his condition, he amends his habits, improves his hygiene and thereby lengthens his life, and perhaps even overcomes some serious physical defect. These facts are, of course, to be borne in mind by the insurance examiner. The system of exchanging lists of rejected applicants, however, if used as a safeguard and not as a blacklist, is to be commended, protecting, as it does, the policy holder from loss through unwise risks.

1. Medical Sentinel, September, 1903.
2. St. Paul Med. Jour., January, 1904.
3. The Journal A. M. A., Jan. 9, 1904, p. 107, Canada News.

Medical News.

CALIFORNIA.

New College Opens.—With appropriate ceremonies the Oakland College of Medicine was formally opened January 8. Dr. Frank L. Adams delivered the address of welcome.

Sanitarium Burned.—The Pajaro Valley Sanitarium, Watsonville, was destroyed by fire January 9. The six patients in the institution were removed in safety. The loss is $30,000, partially covered by an insurance of $13,000.

More Plague.—Two deaths from plague occurred in San Francisco in January. In Case 111 death occurred on January 10, and the diagnosis was confirmed January 25; in Case 113 the patient died on January 13, and the diagnosis was confirmed on January 22. During 1903, 17 cases occurred, and in 1902, 41 cases.

Personal.—Dr. Dennis D. Crowley, Oakland, has been appointed surgeon-general of the state, with the rank of colonel, succeeding Dr. Winslow Anderson.——Dr. Thomas Ross, Sacramento, has been made consulting physician of the Southern Pacific Hospital in that city, and Dr. Andrew M. Henderson has been placed in charge of the hospital.——Dr. Weston O. Smith, Alameda, president of the local health board, has resigned.——Dr. James W. Jesse, Santa Rosa, has been appointed physician and health officer of Sonoma County.——Dr. Henry B. Bessac, Forbestown, has been elected physician of Butte County.

Wholesale Changes.—The new San Francisco Board of Health, January 9, by abolishing numerous positions and creating many new ones, thereby effected, it is said, a saving of about $10,000 a year in salaries. The medical changes are as follows: Vacancies declared—Health officer, Dr. Aloysius P. O'Brien; bacteriologist, Dr. Howard Morrow, and city physician, Dr. Joseph G. Morrissey. Positions created—Deputy health officer, Louis Levy; district health officers, Drs. John F. Dillon, Albert S. Adler, and Frank J. Tillman; city physicians, Drs. George P. Purlenky and Tullio A. Rattanzi; chief inspecting physician, Dr. William C. Hassler; inspecting physicians, Drs. G. W. Goodale, Walter Jackson, Cosmos A. Glover and William J. Walsh; bacteriologist, Dr. Frederick G. Canney, and medical chemist, Dr. August C. Bothe. Dr. Denis F. Ragan has been confirmed as health officer, and Dr. George F. Brackett, chief emergency physician.

IDAHO.

Hospital at Boise.—St. Luke's Hospital at Boise is a modern hospital building, erected at a cost of $25,000. It has nearly 40 rooms, and is equipped with modern appliances.

Albion Has Smallpox.—Several cases of smallpox have appeared in Albion, one of which is in the dormitory of the state normal school. The town was immediately quarantined.

Personal.—Dr. Edward E. Maxey, Boise, secretary of the state medical society, has gone east for post-graduate study.——Dr. Isaac S. Collins, Lewiston, has resigned as physician of Nez Perces County, on account of ill-health, and Dr. John F. Hurlbut has been appointed in his stead.

Idaho State Medical Society.—At the annual meeting held in Boise the following officers were elected: Dr. Jesse L. Conant, Genesee, president; Dr. Robert L. Nourse, Hailey, vice-president, and Dr. Edward E. Maxey, Boise, secretary and treasurer. The next meeting will be held in Lewiston.

ILLINOIS.

Medicine-Man Fined.—W. M. Portner, an alleged doctor of medicine, traveling with a medicine company, was fined $100 at Piper City for practicing medicine without a license.

Smallpox Closes Schools and Churches.—The town council and school board of Bloomington decided, February 2, to close the schools and churches indefinitely on account of the alarming spread of smallpox.

A Healthful City.—Evanston asserts that it is the healthiest city in America. In 1903 only 212 deaths occurred, a death rate of 10 per 1,000. Of the deaths, 28 were due to pneumonia, 26 to heart disease, and 22 to tuberculosis.

East St. Louisians Must Not Spit.—The city council of East St. Louis, on January 25, passed an ordinance prohibiting spitting on sidewalks, in public buildings, street cars and railway stations. A penalty varying from one to five dollars is provided for every violation.

Old Physicians Honored.—At the annual banquet of the Decatur Medical Society, January 26, Dr. William J. Chenoweth, who has been 50 years in practice, and Dr. Ira N. Barnes, who was graduated 41 years ago, were the guests of honor. Dr. Silas E. McClelland acted as toastmaster.

Chicago.

Hospitals Under Ban.—The building commissioner has notified 13 hospitals that they must receive no new patients until certain specified changes, looking to safety in case of fire, have been made.

Alexian Brothers' Hospital.—During 1903 this hospital cared for 3,002 patients; 1,032 were discharged cured, 488 discharged improved, and 91 discharged unimproved. The deaths of the year numbered 333. Of these 126 were in dying condition when brought to the hospital.

Deaths of the Week.—During the week ended January 30, 549 deaths were reported, 32 more than for the previous week, and 37 less than for the corresponding week of 1903. Pneumonia led with 121 deaths; consumption caused 57; heart disease, 56; bronchitis, 40, and violence 37.

Result of a Cold January.—Notwithstanding that the mean temperature of the month has been five degrees below the normal, the department of health states that the death rate promises to be among the lowest on record. The average January rate since 1893 has been 16.32 per 1,000. For the month just closing it will be about 14. The lowest during the period was 13.69, in January, 1896; the highest, 20.91 in 1893. Last January, although milder than normal, the public health was affected by the coal famine, and the death rate was 16.07 per 1,000.

IOWA.

Communicable Diseases.—During December, diphtheria was reported in 9 localities; scarlet fever in 39; measles in 2; whooping cough and chicken-pox each in one locality, and smallpox in 12 localities.

Sixty Years in Practice.—To celebrate his eighty-sixth birthday and the sixtieth anniversary of his entry into practice, Dr. Ben Selman, Bloomfield, entertained the physicians of the city at a turkey dinner, January 17.

Unlicensed Osteopath Fined.—It is reported from Taylor County that D. B. Roberts pleaded guilty to the charge of practicing osteopathy at Bedford without proper legal authority, and was fined $300 and costs. He was committed to jail in default of payment.

Dedication of New Medical Building.—The new building of the Medical Department of Drake University was dedicated January 29. Dr. D. S. Fairchild, dean, read a paper on "History of the Growth of Drake University College of Medicine and the Changes in the Methods of Medical Education During that Time"; Dr. G. H. Simmons, Chicago, on "Medical Education, Ideal and Practical"; Dr. D. C. Brockman, Ottumwa, Iowa, "Duties of the Medical School to the Profession and to the Public"; Hon. Nathan E. Coffin, Des Moines, "The Relation of the College of Medicine to the City"; and Mr. Hill M. Bell, president of the university, "Relation of the University to the Medical School." The building is a two-story structure with high basement, making it practically a three-story building. It will be used especially for the junior and senior class work; the work of the first two years will be carried on at the university.

MARYLAND.

Baltimore.

Deaths of the Week.—The deaths last week numbered 235, an annual death-rate of 21.24 per 1,000; consumption and pneumonia leading with 33 and 28 respectively.

For Tuberculosis Sanitarium.—Of the $25,000 needed to secure another $25,000 offered by a man of Baltimore for the building of a sanitarium in the Blue Ridge in connection with the Hospital for Consumptives, $14,000 has been raised by the Quarter Club, and from other sources.

Halliburton Lectures.—Dr. W. D. Halliburton, F.R.S., professor of physiology at King's College, London, lectured last week before the students of the University of Maryland and before those of Johns Hopkins. The subject of the former lecture was "The Proteids of Muscle and Nerve." He was the guest of Dr. John C. Hemmeter while in Baltimore.

Tuberculosis Philanthropy.—During his visit to the Tuberculosis exposition last week Mr. Henry Phipps of New York, well known for his philanthropy in this field, gave to the Johns Hopkins Hospital, through Dr. William Osler, for the purpose of establishing a separate out-patient department at the hospital, $20,000. It is said that he gave one-half this amount to the same institution a year ago. His gifts to the institution in Philadelphia, founded by him and bearing his name, are

said to amount to several hundred thousands. In connection with the work at the Johns Hopkins Hospital, it may be mentioned that it has been carried on for several years through the generosity of two ladies of Baltimore. Cases have been visited in their homes and special directions given to the families as to the management of the disease. A library of tuberculosis has been started.

MASSACHUSETTS.

Hospital for East Boston.—There is a bill before the legislature to appropriate $100,000 for the erection of a hospital for East Boston.

Hospital Union Fund Concerts.—During February the Hospital Music Fund Committee will give concerts at Adams Nervine Asylum, Cullis Consumptives' Home, Home for Aged Couples, Boston City Hospital, and the Massachusetts Infants' Asylum.

Willard Hospital Report.—The annual meeting of the Willard Hospital, Bedford, for the treatment of alcoholism and narcotic habits, reports 53 patients treated during the year. Considerable enlargements have been made in buildings and equipment during the year, but the demand for more is urgent.

Hospital for Children.—The thirty-fifth annual meeting of the Children's Hospital Corporation in Boston reported 1,519 patients treated in the wards last year, and 24,529 in the outpatient departments. Earnest efforts are being made for funds to replace the burned convalescent home in Wellesley and for the erection of a hospital with adequate facilities in common with the new Harvard Medical School.

Dissemination of Infectious Diseases.—The quarterly meeting of the Massachusetts Association of Boards of Health discussed the dissemination of infectious diseases, the paper being read by Dr. Theobald Smith, and the source, effect and prevention of an unhealthy milk supply, the paper being by Prof. Charles Harrington. The association also took vigorous action in protest against the passage of the antivivisection bill now before the legislature which would very greatly interfere with the work of local boards of health in their efforts to prevent disease.

Extension of Councilman's Work.—The work of Dr. William T. Councilman of Harvard Medical School in the cause of smallpox, which was presented last year, is to be supplemented by further studies in the Philippines. Two of his assistants, who have worked for some years on the subject, Drs. W. R. Brinckerhoff and E. E. Tyzzier, will leave soon for Manila. They will endeavor to determine the relations of these protozoa to others, and the mode of infection of man. Other tropical diseases may also be studied as encountered. But the special object of the fund, which pays their expenses is to gain more complete knowledge of these germs, associated with variola and vaccinia.

PENNSYLVANIA.

Physician Injured.—Dr. Edward M. Emrick, Shamokin, was struck by a train at that place, January 18, and sustained a fracture of the base of the skull.

Hospital Openings.—Mount Pleasant Memorial Hospital, presented to the town by the late Jacob Justice of Philadelphia, was formally opened January 22.——St. Joseph's Hospital, Southside, Pittsburg, will be opened April 1.

Election.—The Medical Society of Center County held its annual meeting in Bellefonte, January 12, and elected the following officers: President, Dr. Walter J. Kurtz, Howard; vice-presidents, Drs. Samuel G. Coons, Benore, and John Sebring, Jr., Bellefonte; secretary, Dr. Jared Y. Dale, Lemont, and treasurer, Dr. George F. Harris, Bellefonte.

Philadelphia.

Dinner to Dr. Hinsdale.—On January 29 a farewell dinner was given to Dr. Guy Hinsdale by a number of his professional friends.

Did Not Report Smallpox.—Dr. William C. Hollopeter was fined $10.50 for failure to notify the bureau of health of a case of smallpox. He contended that he had notified the bureau by telephone.

School Hygiene.—Under the auspices of the board of education a number of lectures are to be given on school hygiene. Dr. S. Weir Mitchell will deliver the first lecture, entitled "Nervous Diseases, Their Causes and Effects."

Portrait Presented.—An oil painting of the late Dr. Thomas G. Morton was presented to the Pennsylvania Hospital by the Association of Resident Physicians of that institution, January 11. Dr. Morton was connected with the hospital in various capacities for more than 40 years.

Personal.—Dr. R. Bruce Burns has been superseded as president of the board of directors of the Frankford Hospital by Dr. B. Frank Walters.——Dr. Randle C. Rosenberger, associate in bacteriology in the Jefferson Medical College, has been appointed director of the bacteriologic laboratories of the Philadelphia Hospital.

Baby Farmer Convicted.—Herbert J. Stahl, proprietor of a "baby farm," tried for the death of an infant from alleged starvation, has been convicted of involuntary manslaughter. The maximum penalty, which is two years' imprisonment and $1,000 fine, was imposed. The commonwealth asked for a verdict of murder in the second degree.

Bequests.—By the will of the late Cordelia A. Brown $5,000 is bequeathed to the Methodist Hospital to endow a free bed in memory of William Brown, her husband.——Harriet Richards, who died recently, left $10,000 to be expended by the executor of her estate in establishing free beds in one or more of the Roman Catholic hospitals of the city.

Medicolegal Election.—At the annual meeting of the Medicolegal Society, held on January 26, the following officers were elected: President, Dr. J. Cardeen Cooper; vice-presidents, John R. Umstead, and Dr. Justus Sinexson; secretary, Dr. William T. Hamilton; treasurer, Dr. G. M. O. Peltz, and censors, J. H. Wolfe, and Drs. Wm. Ruoff and Edgar W. Tully.

New Medical Inspectors.—Thirty-seven medical inspectors have recently been added to the department of health. These were chosen from 250 applicants, who were required to pass a Civil Service examination. Dr. Andrew A. Cairns has been appointed chief medical inspector. Dr. Thomas J. Beatty was made assistant chief medical inspector, and Dr. J. Howard Taylor, for years chief medical inspector, assistant medical inspector.

Health Report.—The report to the bureau of health showed, for the week ended January 30, 65 new cases of smallpox; for the previous week, 106. Of typhoid fever for the corresponding periods there were 126 and 88 new cases, respectively. The water supply in many parts of the city is very turbid because of the recent heavy snow and rainfall, a condition, perhaps, accounting largely for the increased number of typhoid cases. Pneumonia continues to claim a large number of victims, the number of deaths from the cause the last week being 97.

RHODE ISLAND.

Tetanus Patient Convalescent.—A case of tetanus has been under treatment for a month at the Newport Hospital, with antitoxin, and is reported convalescent.

Contagious Diseases.—During October and November 210 cases of diphtheria were reported, 121 cases of scarlet fever, 86 cases of typhoid fever, and 44 cases of measles.

Treats Many Cases.—The Rhode Island Hospital reports 4,150 cases treated in 1903, and the average daily number of patients in hospital was 232. This is a marked increase, 19 per cent. and 10 per cent. respectively over the previous year.

November Mortality.—During November 580 deaths occurred in the state. Of these 165 were from communicable diseases, including 74 from tuberculosis; 79 from genito-urinary disease; 64 each from nervous and circulatory diseases; 58 from diseases of children, and 28 from violence.

Election.—At a recent meeting of the Newport Medical Society the following officers were elected: President, Dr. Christopher F. Barker; vice-president, Dr. V. Mott Francis; secretary, Dr. Mary E. Baldwin; treasurer, Dr. Douglas P. A. Jacoby; librarian, Dr. William S. Sherman; curator, Dr. Harry J. Knapp; bacteriologist, Dr. Chas. W. Stewart; executive committee, Drs. V. Mott Francis, William S. Sherman, and S. Parker Cottrell, and censors, Drs. William S. Sherman, Douglas P. A. Jacoby and Stephen C. Powell.

SOUTH DAKOTA.

Will War on Quacks.—The State Board of Medical Examiners is said to be about to take active steps to rid the state of the numerous irregulars who have been plying their trade unrestrained up to this time.

Fire in Hospital.—Fire in the basement of the Sioux Falls Hospital, January 1, necessitated the removal of the patients in a fierce snowstorm, but no casualties occurred, and the building was not seriously damaged.

District Society Meeting.—The meeting of the Eighth (Yankton) District Medical Society was held in Vermillion, December 29. Dr. Frithiof N. H. Gyllenhammar, Gayville, was elected president; Dr. Thomas Cruickshank, Vermillion, vice-president; Dr. James L. Stewart, Irene, secretary and treasurer; Dr.

Sherman G. Berry, Tyndall, censor, and Dr. William E. Moore, Tyndall, delegate to state society. The next meeting will be held in Tyndall.

TENNESSEE.

Physician's House Burns.—The house of Dr. William T. Watson, Lexington, was recently burned. The loss was $4,000.

College Opens.—Tennessee Medical College, Knoxville, opened January 4 for the mid-winter term, with an increased attendance.

Smallpox.—Sevier County has thirty or more cases of the disease.——The epidemic at Morristown is thought to be at an end.——In Knox County 101 cases are reported.

Personal.—Dr. T. B. Peyton, Gallatin, has been elected health officer of Sumner County, vice Dr. Brown, resigned.——Dr. William G. Ewing has been elected chairman of the Nashville Board of Health, succeeding Dr. John R. Buist, and Dr. Larkin Smith has been re-elected health officer.

Crusade Against Illegal Practitioners.—The State Board of Medical Examiners is making an active campaign against illegal practitioners of medicine. Two "herb doctors" of Chattanooga have been bound over to the Criminal Court; one of the accused was discharged and one failed to appear. More warrants have been issued.

Commencement.—The commencement exercises of the medical department of the University of the South, Sewanee, were held January 21. Dr. John S. Cain, the dean, delivered an address on "Medical Ethics," and Vice-Chancellor Wiggins an address on "The Necessity of Education in the Profession." A class of 27 was graduated.

TEXAS.

Smallpox.—Burgess reports 3 cases; Sour Lake about 50 cases; Granger, 10 cases; Marshall, 7 cases; Troupe, 25 cases, and Tyler several cases.

Still Another Medical College.—Bell's Medical College, Dallas, has been incorporated with a capital stock of $3,000, by Dr. Arthur C. Bell and others.

Hospital Transferred.—Dr. Charles M. Rosser, Dallas, has formally transferred the Good Samaritan Hospital in that city to the president of the board of directors of the Texas Baptist Memorial Sanitarium.

Society Meetings.—COLEMAN COUNTY MEDICAL SOCIETY.—At the last meeting of the society the following officers were re-elected: Dr. Charles M. Alexander, Coleman, president; Dr. J. D. McCann, vice-president; Dr. Thomas M. Hays, Santa Ana, secretary and treasurer; Dr. Newton Long, Santa Ana, delegate to state association, and Drs. Gabriel B. Beaumont, Coleman, J. M. Mathews, and Charles M. Alexander, Coleman, censors.

SMITH COUNTY MEDICAL SOCIETY.—This society met at Tyler, December 8; the charter issued by the state association was presented, and the following officers were elected: Dr. Irvin Pape, Tyler, president; Dr. J. Charles Smith, Starrville, vice-president; Dr. Albert E. Woldert, Tyler, secretary and treasurer, and Drs. Thomas J. Bell, Jasper D. Phillips and John Z. Ferrell, all of Tyler, censors. At the banquet which followed, Dr. Holman Taylor, Marshall, councilor for the Fifteenth District, presided as toastmaster.

UTAH.

Hospital at Salt Lake.—A building permit has been issued for the Latter-Day Saints' Hospital, Salt Lake City, to cost $90,000.

New Post Hospital.—The quartermaster-general has asked Congress to appropriate $155,000 for the erection of a new post hospital at Fort Douglas.

Smallpox Epidemic.—Smallpox is said to be raging in Cache and Box Elder counties. In Cache County 77 cases have already been reported.——Smallpox is abating at Nephi, and the quarantine has been raised.

Weber County Society Meeting.—The Weber County Academy of Medicine met at Ogden, January 6, and elected Dr. John S. Gordon, president; Dr. John Driver, vice-president; Dr. Lyman Skeene, Jr., secretary; Dr. Samuel L. Brick, treasurer, and Dr. James M. Harris, librarian, all of Ogden.

Personal.—Dr. Frederick E. Straup, Bingham, has been suffering from an infected wound of the thumb, which necessitated a partial amputation.——Dr. John J. Steiner has been appointed health officer of Panguitch.——Dr. Theodore B. Beatty, Salt Lake City, secretary of the State Board of Health, has been appointed a member of the committee on smallpox under the auspices of the U. S. P. H. and M.-H. Service.

VIRGINIA.

Bequest.—By the will of the late Robert S. Bosher, Richmond, $2,000 is devised to the Sheltering Arms Hospital.

Honor Dr. McGuire.—On January 7 the Medical College of Virginia and the University College of Medicine suspended operations, and the faculties and students attended the unveiling of the statue of Dr. Hunter McGuire.

Gives Solarium.—Mrs. Lewis H. Hyde of New York has given $3,000 to provide for the erection of a sun-parlor in the Winchester Memorial Hospital. It will be octagonal, two stories high, and built almost entirely of glass.

Free Hospital Treatment for Indigent Virginians.—A bill is proposed making an appropriation of $17,000 to the Medical College of Virginia. The present annual appropriation of $5,000 for general purposes is included and is to be expended as heretofore. The remaining $12,000 is to be set apart for the purpose of payments to the college at the rate of $1 a hospital day, which includes board, lodging, nursing, etc. All citizens of the state are entitled to receive treatment on proper proof of citizenship, necessity for treatment and pecuniary inability to pay for same.

WEST VIRGINIA.

New Hospital Opened.—The Mountain States Hospital, recently erected by Dr. Charles S. Hoffman at Keyser, has been opened for the reception of patients.

Will Build City Hospital.—The executors of the estate of the late Dr. Andrew G. Clarke, Parkersburg, have turned over to the designated trustees $26,308.56, the amount of the bequest for a city hospital.

Societies Meet.—MARION COUNTY MEDICAL SOCIETY.—At the second annual meeting held in Fairmont, December 30, Dr. Presley B. Ogden, Fairmont, was elected president; Dr. Albert L. Peters, Gray's Flats, vice-president; and Dr. Jesse A. Jamison, Fairmont, censor. Dr. James W. McDonald, Fairmont, was re-elected secretary, and Dr. William H. Sands, Fairmont, treasurer.

MARSHALL-WETZEL BI-COUNTY MEDICAL SOCIETY.—The following officers were elected at a meeting held in Moundsville, January 4: President, Dr. John C. McCullough, Moundsville; vice-president, Drs. J. F. Reger, Littleton, and James E. Cooper, Cameron; secretary, Dr. W. De Witt Stewart, Moundsville, and treasurer, Dr. John R. Davis, Moundsville.

Visiting Staff Selected.—The members of the visiting staff of the Huntington Hospital have apportioned their time of service as follows: January, June, November—Drs. Thomas J. Pritchard, Charles T. Taylor, Isaac R. LeSage and Thomas F. Stuart; February, July, December—Drs. Edward S. Buffington, Alexander C. Burns, William R. Cummings, Eastbank, and S. W. Hogsett; March, August—Drs. Robert E. Vickers, Edward E. Sample, Thomas E. W. Grover and W. D. Hicks; April, September—Drs. Henry A. Brandebury, George N. Waldeck, Archibald Crary, and H. C. Solter; May, October——Drs. Morgan Baker, John D. Myers, J. E. Rader, and Cassius C. Hogg; and oculists and aurists—Drs. Thomas W. Moore, J. H. Reynolds and John C. Geiger.

WISCONSIN.

Sanitarium Opens.—The Waukesha Springs Sanitarium under the superintendency of Dr. Byron M. Caples, has opened.

Removal to Capital.—The State Board of Health has moved its offices from Milwaukee to Madison. Dr. Cornelius A. Harper, Madison, has been elected secretary, succeeding Dr. Uranus O. B. Wingate. Dr. William F. Whyte, Watertown, has been re-elected president.

Would Muzzle Dogs.—All Milwaukee dogs running at large are to be muzzled for six months, if the recommendation of the joint committee on judiciary and health be adopted by the city council. The proposed ordinance has the endorsement of the Milwaukee Medical Society.

Will Prosecute Paradis Again.—The State Board of Medical Examiners announces that, notwithstanding its defeat in the case against Joseph E. Paradis of Marinette, for practicing medicine without a license, it will make another attempt to prosecute him, as the adverse decision was due only to a technicality.

Eyes and Ears To Be Examined.—Investigations have demonstrated that 38 per cent. of the school children of the state are defective in vision or in hearing, or in both. The State Board of Health has, therefore, determined that, on entrance to the public schools, each pupil shall be examined, and the parents of those found defective in sight or hearing shall be

notified, and the suggestion made that corrective measures be taken.

Personal.—Dr. Frank Garlock, Racine, has gone to Manila, P. I., to practice.——Dr. Hasso A. Meilike, Clintonville, has been appointed a member of the State Board of Health.——Dr. Thomas B. McIndoe, Rhinelander, has been reappointed a member of the State Board of Medical Examiners.— -Dr. Charles S. Sheldon, Madison, has been re-elected secretary, and Dr. Sidney H. Hall, Ripon, treasurer, of the Wisconsin State Medical Society.

GENERAL.

Panama Physicians Preparing.—The U. S. Public Health and Marine-Hospital Service is said to have begun actively to prepare for the Panama Canal campaign. Physicians are to receive special training, and, under the supervision of experts, will endeavor to prevent much of the sickness that is liable to occur among the workmen on the isthmus. The headquarters will be in a large hospital to be erected at Colon.

The Committee on Medical Legislation of the American Medical Association, it is announced by the Chairman, Dr. Charles A. L. Reed, will meet at the New Willard Hotel, Washington, D. C., at 11 a. m., Wednesday and Thursday, February 10 and 11, in conference with the National Auxiliary Legislative Committee, consisting of one representative from each state medical association and from each of the national medical services.

CANADA.

Personal.—Dr T. J. Norman of Toronto has been appointed assistant superintendent of the Asylum for the Feeble-Minded at Orillia, Ontario, in succession to Dr. Mohr.——Dr. Charles A. Hodgett has been appointed secretary of the Ontario Board of Health, in succession to Dr. Peter H. Bryce.

A University for British Columbia.—The idea of the establishment of a university in British Columbia was put forward recently at a meeting of the Tourist Association of Victoria, and the citizens of that province will work assiduously for the institution. Its success will probably mean a medical school on the Pacific coast.

Epidemic of Typhoid Fever in Montreal Improving.—The typhoid fever situation, which has been causing considerable alarm in Montreal during the past six weeks, is now decidedly improving. In Westmount only one new case has been reported in several days. At St. Henri no new cases have been reported during the past week. Dr. Fleury of the Notre Dame Hospital, has found, on making an examination of the blood of some of the St. Henri patients, that some of the cases were not genuine typhoid as was supposed.

Toronto Orthopedic Hospital.—The fifth annual report of this hospital, just issued, shows the past official year to have been the most successful in its history. In the first year 172 patients were treated; in the second, 221; third, 255; fourth, 278; fifth, 353. There were 31 patients Sept. 30, 1902; admitted during the following year, 322; total treated, 353; discharged, 323; deaths, 1; patients remaining at end of year, 29. Of the 353 patients, 146 were under and 207 were over 14 years of age. The number of operations was 290.

British Columbia Association for the Prevention of Consumption.—This was established at a largely attended meeting held in Victoria, B. C., January 20, at which were present delegates from all parts of the province, as well as representatives of the dominion and provincial governments. Sir Henry Joly, lieutenant-governor of the province, was elected honorary president, and Dr. Proctor of Kamloops, secretary; Dr. C. J. Fagan of Victoria, treasurer, and on the committee of management, Dr. J. C. Davie of Victoria and Dr. R. E. Walker of New Westminster. The provincial government will be approached for a grant of $25,000.

The Health of Victoria, B. C., During 1903.—There were reported in Victoria during 1903, 66 cases of diphtheria, 6 deaths; scarlet fever, 117 cases, 2 deaths; other cases of infectious diseases were very few, with no deaths. Two cases of smallpox occurred, but prompt measures prevented the spread of the disease. The Lazaretto at D'Arcy Island has only two patients—both Chinese. Precautions are still being continued to prevent the introduction of the bubonic plague. Taking Victoria's population at 25,000, the average death rate per 1,000 for the past three years has been 11.57. The total number of deaths in Victoria during 1903 was 131.

FOREIGN.

Neurology in Asia and the South Sea.—The professor of psychiatry at Munich, Emil Kraepelin, has just started on a long tour of investigation through eastern Asia and the southern Pacific to study nervous and mental disease as it occurs there and the conditions which influence it, especially its relation to alcoholism. Dr. Gudden will conduct the psychiatric clinic during his absence.

Anticharlatan Congress.—The first annual congress of the Anti-Charlatan Society of Germany was held at Berlin, January 14. Excellent addresses were made on the legal status of quacks, on proprietary medicines, etc. The attendance was not as large as anticipated. Reisig of Hamburg advocated the plan of educating the public in regard to quack practices by means of popularly written pamphlets.

Fifth International Congress of Dermatology.—Berlin will welcome this congress Sept. 12 to 17, 1904. Professor E. Lesser will preside, and Dr. O. Rosenthal is the general secretary. His address is Potsdamerstr. 122 g. Berlin W. The themes appointed for discussion are: "Cutaneous Affections in Case of Anomalies in Metabolism," "Syphilitic Affections of the Organs of Circulation," "Epitheliomata and Their Treatment," and "Present Status of Leprosy (since the first leprosy congress of 1897)," and "Present Status of Anesthetic Leprosy."

Visit of Spanish Medical Students to Paris.—A large number of Spanish students from Madrid, Valencia, Barcelona and other university centers, recently took a trip to Paris, where rooms had been engaged for them in the Latin quarter. They took their meals at the large Students' Co-operative Restaurant, which was founded and is managed by and for the students of the quarter at the minimum of expense. The Pasteur Institute, the hospitals and the clinics were the goal of the medical members of the party, and every facility was afforded them by the committee of Paris students appointed to receive the delegation. Great scientific zeal was displayed by the students during the few days of their visit.

Electrotherapy in Disfavor at Lille, France.—Professor Doumer of Lille has for several years had charge of a service of electrotherapy, which he established with the modest sum of $1,300 in 1892, this expense shared by the city and medical faculty. As this sum was inadequate he has supplied apparatus as needed, paying for it himself. From this modest service have issued a large number of important works on electrotherapy. Some have been published in the *Nord Médical*, of which he is one of the three founders, and others in the official bulletin of the French Société d'Electrothérapie et de Radiologie. He has treated an average of 480 patients annually, and his laboratory has been frequently sought by visiting foreigners. One of his latest publications is on the "Treatment of Mucomembranous Enterocolitis with the Continuous Current at High Strengths." The municipal authorities at Lille have recently summarily closed his service, alleging that it is not sufficiently frequented to pay for the room it occupies, but the true reason, the *Nord Médical* asserts, is to be found in Doumer's political opinions.

The Source of Radium.—Joachimsthal in Bohemia has long been famous for its silver and tin mines. The German word for dollar, "Thaler," is derived from its name, as the first silver dollars were made there. As the silver mines were worked out, the place declined until a new industry took its place, the making of the fashionable "uranium glass," which owes its tints to the uranium ore which is found there in abundance. The refuse is called pitchblende or pitch ore, and is a submetallic, pitchy, grayish or greenish-black opaque substance which was regarded as of no value. When Curie, a year ago, wrote to the president of the Vienna Academy of Sciences to ask his aid in procuring him a large quantity of this pitchblende, several tons were forwarded to him and no charge was made. At present the Joachimsthaler authorities are cherishing their pitchblende and will not sell it at any price, not knowing what they ought to charge for it, and perhaps fearing that the supply will give out. It takes ten tons of pitchblende to produce one gram of radium.

French Legislation on Vaccination.—Vaccination has not hitherto been compulsory in France, but the new law, to take effect April 7, 1904, requires every resident in France, native or foreign born, to be vaccinated during the first year of life and revaccinated at the eleventh and twenty-first years. An incident is related in a foreign exchange showing the inconveniences of the old plan. An epidemic of smallpox had broken out at Nice, and the local authorities vaccinated the inhabitants as a preventive measure, not using coercion. An Englishwoman, an Eddyite, preached an antivaccination crusade and prejudiced many persons against it. The authorities were at a loss what to do, and had about decided to compel the lady to leave town when she contracted smallpox herself and died. The disease

did not develop, we are told, among any of the newly vaccinated subjects. Such incidents can not occur after the new law goes into effect, as, if persons are not willing to submit to vaccination, they will not be allowed to reside in France. Nowhere else in Europe is a triple vaccination required.

The New German "Academies for Practical Medicine."—The Prussian authorities are planning an institution in connection with the public hospital in cities, which is to afford graduate instruction and train physicians in specialties. The city of Düsseldorf is building a new public hospital, and arrangements are being made for the new "Akademie für praktische Medizin" to be connected with it. It will have facilities for instruction in internal medicine, surgery, obstetrics, infectious diseases and a fifth department devoted to pathologic anatomy, etc. There will be subdepartments for eye, nose, throat and ear work, for children's diseases, cutaneous and nervous affections, and treatment of accidents. Physicians who wish to take up a specialty will be installed as assistants in the special departments, and after serving a certain number of years will be given a certificate as to their proficiency in their specialty. The training of nurses for the sick is also another task of the academy, with the holding of free graduate courses for all physicians, and instruction of the public in matters of hygiene, but the principal purpose for which it is organized is to perfect the education of the graduates from the medical colleges who are not allowed to practice until they have served a year in some hospital or allied official institution.

Correspondence.

Price and Quality of Diphtheria Antitoxin.

PHILADELPHIA, Jan. 30, 1904.

To the Editor:—In your editorial of January 23, on the subject of "The Price of Diphtheria Antitoxin," you state: "Judging from the correspondence before us, and from the information which we have concerning the manufacture of antitoxin, we can not but believe that the prices of antitoxin have been and are higher than is necessary for a reasonable profit."

Appreciating the wrong impression that has been created by the sensational articles appearing in the lay press and by your statement relative to the price charged being unreasonable, and to give the reasons why we discontinued the lower potency of antitoxin, formerly known as "Standard," will you permit me to state the following facts:

During the past nine years we have been preparing antitoxin especially to meet the demand of American physicians. We offered at first three grades, known as "Standard," containing 100 units per c.c.; "Potent," containing 250 units per c.c.; "Extra Potent," containing 500 units per c.c. The demand gradually increasing and being principally for the higher potencies, we cut out the weakest strength entirely, and placed two potencies of serum on the market, known as "Standard," the potency of which was increased to 250 units per c.c.; and "Concentrated," 500 units per c.c. During the past two years the demand for the higher potency serum or "Concentrated" has largely increased, while the demand for the weaker serum has greatly diminished.

We date every package of antitoxin and exchange for a fresh supply any serum not used within the time specified on the label. Our experience proved that the physicians demanded the more concentrated product, and since we were compelled to exchange for this the greater portion of the lower-potency serum distributed, and since these exchanges added a large expense to the distribution and cost of antitoxin, we believed that by issuing but one strength—and that the higher potency, the returns would be largely controlled; that we would be issuing what physicians demanded, and that this saving of expense of exchanging unused serum would warrant a reduction in price. This is what we have done, and prices have been reduced on an average of 15 per cent., as per the following schedule:

	Present Price.	Former Price.
500 units	$1.10	$1.25
1000 units	2.00	2.25
2000 units	3.50	4.00
3000 units	5.00	5.75
4000 units	6.50	7.50

(By requests of physicians we have relisted the 500 units package.)

We had not supplied the Chicago Board of Health, previous to January 7, for a considerable length of time, nor would we, since the price at which they were purchasing their supply was less than that at which we could prepare it. Consequently, when we were asked for a quotation, we offered the high-potency serum only. We were not requested to quote on the weaker serum, the general distribution of which had been discontinued, and on which we would have been pleased to quote a price on request, at about cost of production. We have always endeavored to meet every reasonable demand that has been made for legitimate preparations, and if the Board of Health of Chicago or of any other city or state requires a low-potency serum for free distribution, we shall be glad to furnish it, and at about cost. In determining to offer but one potency of antitoxin we believed that the indigent sick were entitled to receive the same advantage of concentrated serum as the well-to-do.

Meanwhile, if the City of Chicago or any other city or town having a regularly organized health department refuses to supply reputable physicians with antitoxin for the treatment of the needy poor, we shall be glad to donate sufficient serum to meet such emergencies. The conscientious manufacturer recognizes the importance of saving life from diphtheria and protecting those exposed to contagion by immunization, just as thoroughly as does the conscientious physician.

The firms engaged in producing antitoxin have invested large sums of money, and are safeguarding the quality of the serum by every means that science, skill and money can command. The directors of the laboratories and their assistants are chosen solely by their scientific attainments; furthermore, we recognize that only by producing the highest standard of quality is it possible for such a business to be continued.

During the past few years the expense of preparing antitoxin has increased enormously. In addition thereto, the cost of syringes, needles and devices for injecting serum direct to the patient, has added materially to the expense, and it is solely by controlling the expense attending the exchange of the weaker potency for the higher potency that we believed it possible to effect such a saving as would enable us to reduce the price.

Relative to the profits accruing from the production of antitoxin, we shall be glad to have any accredited representative of THE JOURNAL or of the American Medical Association examine our books and learn the exact profit earned in the production of antitoxin.

There is no trust existing among the manufacturers of antitoxin, nor do we believe such an organization is possible, since the production of antitoxin is only a portion of the business of each firm. While it is true that the lists are practically the same, this is also true of the general and standard commodities offered.

The conclusion of your editorial that "Under no consideration must it be thought that physicians want a cheap antitoxin" is insured, since the United States Government has rigid regulations safeguarding its production, and, furthermore, the products are purchased, from time to time, in the open market and subjected to tests, and it would be exceedingly unwise for any firm to market an inferior product, under the careful supervision now practiced.

Meanwhile, it can be depended on that competition, which is keen among the different manufacturers of antitoxin, precludes the possibility of excessive prices being charged.

H. K. MULFORD.

A Protest and Warning Against Use of Name.

NEW YORK CITY, Jan. 30, 1904.

To the Editor:—A concern styling itself the A. S. Valentine Chemical Company is advertising a preparation in the form of a capsule for which it claims scientific and wonderful value in the treatment of gonorrhea, its complications and sequelæ. Investigation shows that the A. S. Valentine Chemical Company is a corporation formed under the laws of the State of New Jersey, and that its incorporators are A. F. Evans, Frank L. Shelton and Nannie L. Shouse, all residents of Kansas City, Mo. This company has a small office at a pretentious

address in New York City, which address it uses in its advertisements. The capsule they sell is a gelatin-coated thick fluid bearing the name "Benzol-Capsule Valentine." The contents of the capsule have been represented as "distilled and encapsulated by Valentine's special process."

As is admitted by the person in charge of the office, who is one of the directors, no person by the name of Valentine has ever been connected with the A. S. Valentine Chemical Company, nor has any person with this surname given it his or her consent to the use of this name.

In order to protect the profession and myself I call attention to the following facts:

1. That I have, in all my writings on gonorrhea, its complications and sequelæ, emphatically expressed my conviction that no drug or combination of drugs administered internally can be a specific in the treatment of these diseases.

2. That no drug or combination of drugs given by the mouth can destroy gonococci.

3. That I do not know the contents of the capsules sold by these people and that I certainly do not recommend them or any other secret preparation.

4. That neither I, nor any relative, nor any acquaintance of mine is in any manner connected with the A. S. Valentine Chemical Company.

5. That on Jan. 7, 1904, through my legal adviser, Henry C. Quinby, of this city, I formally requested the A. S. Valentine Chemical Company to desist from the use of the name Valentine, and on their refusal I caused a petition for an injunction against their so doing to be prepared for filing in the Circuit Court of the United States.

On January 20 the counselor of the so-called Valentine Company had an interview with my legal adviser, Mr. Quinby, which resulted in the former unequivocally advising his clients to cease using the word Valentine in any manner.

I will thank any of my colleagues to inform me of any violation of this promise, so that I may, for the sake of the public, the profession, and my own sake, prosecute as vigorously as the best possible counsel and any sum of money can.

FERD. C. VALENTINE.

Worthless Galenical Preparations.

NEW YORK CITY, Jan. 29, 1904.

To the Editor:—In a recent communication, printed in THE JOURNAL of the American Medical Association, I stated that one of the causes of therapeutic nihilism and therapeutic chaos was to be found in the inferiority of some drugs and in the great variability of galenical preparations. I pointed out the great importance of ordering galenical preparations from strictly reliable sources and referred to the advisability of prescribing the active principles of drugs in those cases where the active principles have been isolated. I want to give an additional illustration which very forcibly illustrates the correctness of my position. As is well known, the solid extract of nux vomica of the U. S. Pharmacopeia must contain 15 per cent. of alkaloids. Prof. Frederick J. Wulling of the University of Minnesota has just reported the analysis of a sample of extract of nux vomica, which contained *not a trace of alkaloid*, instead of 15 per cent. (The italics are Professor Wulling's.) The explanation given is that the extract was undoubtedly heated to too high a temperature in the process of evaporation. Many extracts become entirely worthless if heated too high, and this is done only too often by careless manipulators. Is it any wonder that some physicians become therapeutic nihilists? Suppose a physician uses an extract like the above in gradually increasing doses and fails to get any effect whatsoever—is it any wonder that the seed of skepticism is planted in his mind? Let the physician not condemn his weapons before he is sure that he used the right weapons and that they were properly tempered.

WILLIAM J. ROBINSON, M.D.

119 East 128 Street.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

RADIUM IN CANCER.

INDIANA, Jan. 28, 1904.

To the Editor:—I have a patient suffering with cancer of the larynx who insists that I investigate radium in the hope of applying it in his case. Can you direct me to a reliable source for information? W. M. H.

ANSWER.—The subject of radium and its therapeutic use is involved in so much theory and speculation, as is usual with a new therapeutic agent, that it is impossible at this time to give an opinion as to its exact status in medicine. It will doubtless be found of value in some cancers and other skin affections, but probably not in so many diseases as some writers seem to think. We refer you to a paper by Dr. Inglis in this issue, to our editorials of May 9, 1903, p. 1293; July 11, 1903, p. 107; Aug. 1, 1903, p. 317; Aug. 8, 1903, p. 377, and to abstracts of papers as follows: By Exner and by Holzknecht, Wiener kl. Wochenschrift, No. 27, 1903, in THE JOURNAL, p. 345, Aug. 1, 1903; by London, Berlin kl. Wochen., No. 23, 1903, in THE JOURNAL, p. 400, xli, Aug. 8, 1903; by Dawson Turner and by J. Macintyre, British Med. Jour., Dec. 12, 1903, in THE JOURNAL, p. 65, xlii, Jan. 2, 1904; by Tracy, N. Y. Med. Jour., Jan. 9, 1904, in THE JOURNAL, p. 206, xlii, Jan. 23, 1904.

UNJUST CRITICISM OF A COLLEAGUE.

NEBRASKA, Jan. 27, 1904.

To the Editor:—Thursday, January 14, I was called to see a 6-year-old boy, who for several days had complained of headache, sore throat, loss of appetite, and who had appeared feverish to the parents' touch. I found the following: Temperature, 104.5; pulse, 140; epiglottis and larynx congested and swollen, soreness to the touch on external parts, breathing troublesome, dark sores on tongue, gums, tonsils and as far down as I could see with the use of an ordinary tongue depressor; bowels very constipated, severe headache and sweating. I had them use an antiseptic mixture containing nitrate, glycerin, cocain, etc., as an application every two hours, after first using a 5 per cent. carbolic acid solution as a cleansing agent. Then I kept his bowels open and administered iron, gloneoin and aconite and gave at night a powder containing caffein citrate, morphin and acetanilid in aromatic powder. The fever hung around 102 or 103 until January 20, when several scabs came off with hemorrhages and the temperature went to 99.5 and the pulse to 110. January 23 the temperature and pulse were normal, no swellings, little soreness, and I ordered the boy out of bed for Sunday and ordered sulphur disinfection, as I realized that I had had a mild diphtheria. Sunday a competitor of mine called at the house, looked in the boy's mouth and, without asking me a word of the history or treatment, said: "Never was even a beginning to a mild diphtheria, and you need not disinfect at all. Humbug." I would like to have your opinion on several things: 1. What would my history suggest to you was the case? 2. Could any physician go to a boy after he is well, or out of bed, look in his mouth and say justly, as this doctor did? 3. Is it professional?

ANSWER.—1. The history suggests diphtheria or some infectious disease, but one at a distance can not judge accurately. Only a bacteriologic examination could settle the diagnosis absolutely. 2. No. 3. No.

THE RELATION OF OVULATION AND THE TIME OF IMPREGNATION TO MENSTRUATION.

NORTH DAKOTA, Jan. 22, 1904.

To the Editor:—If intercourse resulting in pregnancy occurs only a few (two to four) days before the menstrual period, would the expected menstruation occur as usual, or would the suppression begin from the time of intercourse and impregnation?

C. E. M.

ANSWER.—Much has been written on this subject and some effort has been made to solve the problem by experiments, but there is not yet agreement on the data and their interpretation. It is generally admitted that there is some genetic relation between ovulation and menstruation, but whether ovulation occurs during menstruation, during the period of premenstrual swelling, after menstruation, or in the intermenstrual period, is not certainly known. Moreover, it is not known how long the free unfertilized ovum can exist nor how long the process of ripening, that is, the casting off the polar bodies, takes. It is known that the spermatozoa can live hours and days in the healthy genital passages of the woman. It is probable that the ovum escapes before or during or just after menstruation and remains intact and capable of being fertilized by the spermatozoa received during intercourse shortly

after the end of menstruation. Fruitful intercourse which occurs later than one week after menstruation is probably to be ascribed to the fertilization of an egg that belongs to the period of the failing menstruation. Intercourse within a day or two of menstruation, if it results in fertilizing an ovum, may either prevent the appearance of the menstrual discharge or cause it to be much smaller in amount than usual. This statement seems to agree best with clinical facts known concerning the duration of pregnancy. If pregnancy results from a single coitus it lasts, as a rule, about 273 to 274 days. This corresponds with the common method of reckoning 280 days from the first day of the last menstruation. If menstruation lasts on an average four to five days, coitus, occurring two to three days later, results in the fertilization of an egg already present. If, as held by some, the spermatozoa are retained in the tube acting as a receptaculum seminis until the escape of the ovum just before the next menstrual period, the real length of the pregnancy dating from fertilization would be two or three weeks less, or 250 to 260 days. It is a fact, however, that the duration of pregnancy dating from coitus which occurs shortly before menstruation is generally about 274 days, or 295 to 300 days dating from the last menstruation. Since, then, the duration of pregnancy dating from coitus is about the same whether intercourse occurs shortly after menstruation or shortly before expected menstruation, it seems probable that the egg fertilized in the first instance is from a different period than that of the latter.

THE EFFECT OF SCARLET FEVER, MEASLES, ETC., ON THE MILK OF NURSING WOMEN.

GLENVILLE, PA., Jan. 25, 1904

To the Editor:—I have seen many mothers, who were having measles, diphtheria and scarlet fever, nurse their children. The practice is common in my section. Have there ever been studies made of mother's milk under such conditions as to the danger or immunity to the child? Can you refer me to any literature on the subject? W. O. S.

ANSWER.—The propagation of tuberculosis through milk, especially cow's milk, has been the subject of considerable discussion and some investigation. Little or nothing has been done in regard to the propagation of scarlet fever and measles through this channel. Many epidemics of scarlet fever have been attributed to the supply of cow's milk. The greater number of these have been reported from England. It was formerly thought that the contagion came from the cow that was affected with a disease identical with scarlet fever. It is generally admitted that in epidemics which are really caused by milk supply the milk is contaminated by the milker or some one who has something to do with the handling of the milk or is living in the rooms where it is cared for or stored. Nursing women, while not exempt from these contagious diseases, are not very often affected, partly because of lessened liability of adults and partly because of decreased danger of infection. Scarlet fever of the puerperium was formerly thought to be common. These cases were almost always due to genital wound infection with skin and throat manifestations and were not cases of true scarlet fever. When a nursing woman is attacked with any acute febrile disease there is generally a diminution in the milk secretion while the proportion of solids is changed, albuminous constituents and the salts being increased. It is probable, however, that the quantitative changes in the chemical constituents of the milk are of less importance than formerly supposed. For the last few years much attention has been given to the milk ferments, and it is probable that these biologic constituents are very important in determining the value, digestibility and assimilability of milk. The study of the ferments as changed by the acute febrile diseases has not yet been undertaken, for this field of investigation is as yet very new. If our correspondent will keep on the lookout in the journals of physiologic research he will no doubt soon find that some worker has entered this interesting field.

In regard to the practical question of withdrawing the child from the breast, it is probably better to let the child continue nursing, if the attack is not very serious. Before the question arises the chance for and danger of infection has already occurred. Further danger of infection is rather from exhalations from the throat than from breast milk. The biologic and chemical changes in the milk are probably not so important as to counterbalance the advantages of the maternal secretion. In a more severe case in which the condition of the mother is serious and when nursing would be a strain on her, of course, the child must be withdrawn at once.

Marriages.

H. B. HARDIS, M.D., to Miss Lena S. Applegate, both of Klamath Falls, Ore., January 9.

FREDERICK HARRISON, M.D., Fordyce, Ark., to Miss Fannie Jones of McCrory, Ark., January 14.

JOHN C. MALONE, M.D., Linden, Ala., to Miss Virginia Prowell of Dayton, Ala., January 13.

FREDERICK J. KALTEYER, M.D., Philadelphia, to Miss Helen Redmond, in New York City, January 15.

H. STOKES DOUGLASS, M.D., Atlantic City, N. J., to Miss Effie Fickens of Bridgeport, Conn., January 11.

WALLACE A. ORT, M.D., Wellston, Ohio, to Miss Stacey Belle Elliott of Columbus, Ohio, at Hamilton, Ohio, in December last.

Deaths.

John Curtis Jones, M.D. University of Edinburgh, Scotland, 1860; a member of the American Medical Association; surgeon in the Confederate Army; member of the Ninth International Medical Congress; member of the State Board of Medical Examiners; some-time vice-president of the Texas State Medical Association; died recently at his home in Gonzales, Texas.

John W. Harriman, M.D. State University of Iowa, Iowa City, 1891, professor of anatomy in the State University of Iowa; formerly surgeon-major Fiftieth Iowa Volunteer Infantry; a member of the American Medical Association, died in Iowa City, January 25, three weeks after an operation for appendicitis, aged 38.

Edward B. Dana, Jr., M.D. College of Physicians and Surgeons, New York, 1889, died from pneumonia at his home in Metuchen, N. J., January 21, aged 40. He was president of the borough board of health and permanent delegate to the state medical society.

Egbert D. Sutherland, M.D. College of Physicians and Surgeons, Chicago, 1885, of Bay City, Mich., who served with the Thirty-third Michigan Infantry, U. S. V., in the Spanish-American War, died from consumption in Detroit, after a long illness, January 25.

William W. Firestone, M.D. Charity Hospital Medical College, Cleveland, Ohio, 1865, a member of the American Medical Association, and one of the oldest and most esteemed practitioners of Wooster, Ohio, died at his home in that city, January 25, aged 61.

Oliver Chase Wiggin, M.D. Harvard University Medical School, Boston, 1866, some-time president of the Rhode Island Medical Society, and president and secretary of the Providence Medical Association, died in Jacksonville, Fla., Feb. 3, 1903, aged 63.

Aaron S. Van Buskirk, M.D. Medical College of Ohio, Cincinnati, 1876, died at his home in Fort Wayne, January 22, a day after an emergency operation for gallstones had been performed, aged 56. At the time, he was convalescing from pneumonia.

J. J. Arthur Liebertanz, M.D., of Zurich, Switzerland, a passenger on the North German Lloyd steamer *Hannover*, was found dead in his cabin on the steamer in Baltimore, January 26, from the effects of an overdose of morphin, aged 42.

George H. R. Bennet, M.D. University of the City of New York, 1860, surgeon of the Twenty-third New York Volunteer Infantry in the Civil War, died suddenly from apoplexy at his home in Brooklyn, N. Y., January 26, aged 66.

Charles J. Warner, M.D. Cleveland Medical College, 1862, a member of the American Medical Association, died at his home in Congress, Ohio, from cancer of the stomach, January 23, after an illness of several weeks, aged 68.

John B. Murphy, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1876, medical superintendent of the Hospital for the Insane, Brockville, Ont., died suddenly from heart disease at that place, January 17, aged 54.

Hugh Spears, M.D. Faculty of Medicine of Queen's University, and Royal College of Physicians and Surgeons, Kingston, Ont., 1873, was found dead in bed, from asphyxiation by gas, Nov. 25, 1903, aged 60.

William Elliott, M.D. Chicago Medical College, 1884, while driving across the Illinois Central tracks at Peotone, January 11, was struck by a train and sustained injuries from which he died January 18, aged 48.

Robert M. Weed, M.D. New York Homeopathic Medical College and Hospital, 1880, of New Rochelle, N. Y., died at Mount Vernon, N. Y., from disease of the liver of long standing, January 26, aged 49.

Frederick A. C. Emerson, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1883, died at his home in Garland, Maine, January 15, from consumption, after an illness of nearly two years, aged 44.

Selden Whittaker Crowe, M.D. National Medical College, Washington, D. C., 1857, died at his home in New York City, January 24, from pernicious anemia, after an illness of four months, aged 68.

Association News.

Atlantic City Hotel Headquarters.—The following hotels have been selected by the Hotel Committee as headquarters for the various sections of the American Medical Association during the annual session, June 7-10, 1904, at Atlantic City. The committee have selected the best hotels along the beach, and in each case have chosen a hotel as near the meeting hall of the respective sections as possible, so as to reduce to the minimum the distances between headquarters and meeting places.

SECTION.	HOTEL.
General Headquarters	Marlborough House.
Practice of Medicine	Hotel Traymore.
Obstetrics and Diseases of Women	Hotel St. Charles
Surgery and Anatomy	Haddon Hall.
Hygiene and Sanitary Science	Gardèn Hotel.
Opathalmology	Seaside House.
Diseases of Children	Hotel Dennis.
Stomatology	The Islesworth.
Nervous and Mental Diseases	The Brighton.
Cutaneous Medicine and Surgery	The Shelburne.
Laryngology and Otology	The Strand.
Materia Medica, Pharmacy and Therapeutics	Young's Hotel.
Pathology and Physiology	The Windsor.

Any information with regard to rates, location, reservation of rooms, etc., will be cheerfully given by the committee, who invite correspondence on the subject.

WM. EDGAR DARNALL, M.D.,
Chairman Hotel Committee, Atlantic City, N. J.

The Public Service.

Army Changes.

Memorandum of changes of station and duties of medical officers U. S. Army, for the week ending Jan. 30, 1904:

Banta, Wm. P., asst.-surgeon, ordered to Fort Clark, Texas, for temporary duty.

Turnbull, Wilfrid, asst.-surgeon, granted two months' leave of absence to go beyond the sea.

Kirby-Smith, K. M., asst.-surgeon, granted twenty days' leave, for extension of seven days.

Hutton, Paul C., asst.-surgeon, relieved from further duty at Peking, China, and ordered to General Hospital, Fort Bayard, N. M.

Hansell, H. S., asst.-surgeon, assignment to Manila, P. I., revoked, and instead ordered to legation guard, Peking, China, for duty.

Carpenter, Alden, contract dental surgeon, ordered to Fort Walla Walla, Wash., for temporary duty.

Voorhies, Hugh G., contract dental surgeon, on temporary duty at Plattsburg Barracks, N. Y., has been granted seventeen days' leave from January 17.

Navy Changes.

Changes in the medical corps of the Navy, week ending Jan. 30, 1904:

Arnold, W. F., surgeon, sick leave extended two months.

Spear, R., P. A. surgeon, ordered to the Naval Hospital, Washington, D. C.

Shipp, E. M., P. A. surgeon, ordered to the Naval Hospital, New York.

Stone, M. V., asst.-surgeon, retired from active service on account of disability incident to the service.

Payne, J. H., Jr., P. A. surgeon, detached from the *Wabash* and ordered to the Naval Hospital, San Juan, P. R.

Morse, E. T., pharmacist, detached from the Navy Yard, Portsmouth, N. H., and ordered to the Naval Laboratory.

Marine-Hospital Service.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the fourteen days ended Jan. 28, 1904:

Wertenbaker, C. P., P. A. surgeon, granted leave of absence for five days from January 21. Detailed to make inspection of places in Mexico and the Texas border recently infected with yellow fever.

Rosenau, M. J., P. A. surgeon, granted one day's leave of absence under Paragraph 189 of the Regulations.

Greene, J. B., P. A. surgeon, granted leave of absence on account of sickness for fifteen days from January 26.

von Esdorf, R. H., P. A. surgeon, granted leave of absence for thirteen days from January 25.

Anderson, J. F., P. A. surgeon, granted leave of absence for six days from Jan. 25, 1904, under Paragraph 191 of the Regulations.

McClintic, T. B., asst-surgeon, granted leave of absence for six days from Jan. 25, 1904, under Paragraph 191 of the Regulations.

Foster, N. B., A. A. surgeon, granted leave of absence for ten days from January 17.

Behng, F. J., A. A. surgeon, granted leave of absence, Dec. 22, 1903, to Jan. 5, 1904, on account of sickness.

Walker, R. T., A. A. surgeon, leave of absence granted for twenty days from Jan. 13, 1904, revoked.

Allen, G. C., pharmacist, on being relieved from temporary duty at Louisville, Ky., by Pharmacist G. O. Ferdinand, to rejoin station at New Orleans.

Holt, E. M., pharmacist, relieved from duty at Louisville, Ky., and directed to proceed to Washington, D. C., and report at Bureau for temporary duty.

Ferdinand, G. O., pharmacist, to proceed to Louisville, Ky., and report to the medical officer in command for duty and assignment to quarters.

BOARDS CONVENED.

Board convened at Washington, D. C., Jan. 25, 1904, for the physical examination of officers for promotion and applicants for admission to the Revenue-Cutter Service. Detail for the board: Asst.-Surgeon-General W. J. Pettus, chairman; Asst.-Surgeon A. J. McLaughlin, recorder.

Board convened at Washington, D. C., Jan. 26, 1904, for the physical examination of such officers of the Revenue-Cutter Service and applicants for admission thereto as may present themselves. Detail for the board: Asst.-Surgeon-General L. L. Williams, chairman; Asst.-Surgeon A. J. McLaughlin, recorder.

Board convened at the Marine Hospital, Port Townsend, Wash., Feb. 1, 1904, for the physical examination of an office of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon J. H. Oakley, chairman; P. A. Surgeon N. H. Foster, recorder.

PROMOTIONS.

Asst.-Surgeons W. C. Billings, J. W. Kerr and G. M. Corput commissioned as P. A. surgeons, to rank as such from Dec. 29 and 31, 1903, and Jan. 6, 1904, respectively.

APPOINTMENT.

Ferdinand, George O., of New York, appointed pharmacist of the third class.

Health Reports.

The following cases of smallpox, yellow fever, plague and cholera have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ended Jan. 29, 1904:

SMALLPOX—UNITED STATES.

California: Berkeley, Dec. 31-Jan. 7, 1 case; Los Angeles, Dec. 26-Jan. 2, 1 case; San Francisco, Jan. 10-17, 2 cases.
Colorado: Colorado Springs, Jan. 8-16, 1 case; Denver, Nov. 28-Dec. 26, 9 cases.
Illinois: Cairo, Jan. 21, 4 cases; Jan. 16-23, Chicago, 2 cases; Danville, 4 cases.
Indiana: Evansville, Jan. 16-23, 2 cases.
Louisiana: New Orleans, Jan. 9-16, 4 cases, 3 imported.
Maine: Jan. 21, Smithfield, 1 case; Stacyville, 11 cases.
Maryland: Baltimore, Jan. 16-23, 1 case.
Michigan: Jan. 16-23, Detroit, 2 cases; Grand Rapids, 1 case; Port Huron, to Jan. 23, 3 cases.
Missouri: St. Louis, Jan. 9-23, 21 cases.
New Hampshire: Jan. 16-23, Manchester, 2 cases; Nashua, 1 case.
New Jersey: Jan. 16-23, Plainfield, 1 case imported; Trenton, 6 cases.
New York: Buffalo, Jan. 8-23, 4 cases; New York, Jan. 16-23, 5 cases, 1 death.
Ohio: Bucyrus, Jan. 8-23, 22 cases; Jan. 15-22, Cincinnati, 8 cases, 1 death; Cleveland, 3 cases; Dayton, Jan. 16-23, 6 cases.
Pennsylvania: Jan. 16-23, Allentown, 1 case; Johnstown, 1 case, 1 from suburban district; Philadelphia, 106 cases, 13 deaths; McKeesport, 5 cases; Reading, 4 cases; Tittusville, 1 case; Williamsport, 4 cases.
South Carolina: Charleston, Jan. 16-23, 3 cases.
Tennessee: Nashville, Jan. 16-23, 3 cases.
Utah: Salt Lake City, Jan. 8-16, 7 cases.
Wisconsin: Milwaukee, Jan. 16-23, 19 cases.

SMALLPOX—FOREIGN.

Austria-Hungary: Prague, Dec. 19-26, 8 cases.
Brazil: Pernambuco, Dec. 1-15, 15 deaths; Rio de Janeiro, Dec. 20-27, 40 cases, 40 deaths.
Canada: New Brunswick, Newcastle, Jan. 21, 1 case imported from Portland.
France: Paris, Jan. 2-9, 16 cases.
Great Britain: Jan. 2-9, Birmingham, 1 case; Leith, 1 case; Liverpool, 1 case; Newcastle-on-Tyne, 6 cases; South Shields, 1 case; Sunderland, 7 cases, 1 death; Glasgow, Jan. 8-15, 44 cases, 3 deaths; Nottingham, Dec. 26-Jan. 9, 14 cases, 1 death; Sheffield, Dec. 26-Jan. 2, 1 case.
India: Bombay, Jan. 15-29, 5 deaths; Karachi, Dec. 20-27, 2 cases, 1 death.
Italy: Catania, Dec. 31-Jan. 7, 1 death.
Mexico: City of Mexico, Dec. 13-Jan. 10, 4 deaths.
Russia: St. Petersburg, Dec. 26-Jan. 2, 31 cases.
Spain: Santander, Jan. 4-11, 8 cases.
Turkey: Smyrna, Dec. 20-Jan. 3, 11 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Dec. 20-27, 3 cases, 3 deaths.
Jamaica: Kingston, Dec. 26-Jan. 9, 2 cases, 2 deaths.
Malta: Dec. 26-Jan. 2, 4 cases, 1 death.
Mexico: Merida, Jan. 8-16, 1 case, 1 death; Vera Cruz, Jan. 8-16, 2 cases.
Venesuela: Maracaibo, Dec. 20-27, 1 case, 1 death.

PLAGUE—UNITED STATES.

California: San Francisco, Jan. 10-13, 3 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, Jan. 10, 1 death.

PLAGUE—FOREIGN.

Brazil: Pernambuco, Nov. 15-Dec. 15, 9 deaths; Rio de Janeiro, Dec. 20-27, 9 cases, 3 deaths.

India: Bombay, Dec. 15-29, 129 deaths; Karachi, Dec. 20-27, 7 cases, 6 deaths.
Mauritius: Dec. 24-31, 53 cases, 29 deaths.

CHOLERA.

Java: Batavia, Dec. 5-12, 14 cases, 3 deaths.
Turkey in Asia: Diarbekir, Dec. 15-20, 53 cases, 28 deaths; Hitt, Dec. 13-15, 8 cases, 4 deaths; Kerbela, Dec. 13-20, 447 cases, 443 deaths.

Medical Organization.

California.

PASADENA MEDICAL SOCIETY.—At the annual meeting held January 19 the Pasadena Medical Society formally dissolved to become the Pasadena branch of the Los Angeles County Medical Society. Dr. Fitch C. E. Mattison was elected chairman; Dr. John E. Janes, clerk, and Dr. Charles D. Lockwood, councilor.

Indian Territory.

GREATER MCALESTER MEDICAL SOCIETY.—Physicians of South McAlester and its vicinity met in South McAlester, January 22, and organized a medical society, appointed a committee to draft a constitution and by-laws, and elected the following officers: Dr. Eben N. Allen, South McAlester, president; Dr. Frank L. Watson, Alderson, vice-president, and Dr. Le Roy Long, South McAlester, secretary and treasurer.

Massachusetts.

NORTH BERKSHIRE MEDICAL ASSOCIATION.—This association has so amended its by-laws that graduates of all regular medical schools are eligible to membership.

New Hampshire.

CARROLL COUNTY MEDICAL ASSOCIATION.—A meeting of the society was held at Sanbornville, January 19, at which the society reorganized on the standard plan, adopted a new constitution and by-laws, and elected the following officers: Dr. W. S. Davis, Sanbornville, president; Dr. Pearl J. Haskell, Sanbornville, vice-president; Dr. Ervin W. Hodsdon, Centerville, secretary; Dr. Nathaniel H. Scott, Wolfboro, treasurer, and Drs. J. W. Dearborn, Maplewood, and Stillman P. Getchell, Wolfboro, delegates to the state society.

South Dakota.

STATE FULLY ORGANIZED.—South Dakota is now organized according to the plan suggested by the American Medical Association, with the difference that in place of the county societies the state is divided into nine districts, with the same powers and duties as the county societies. All of the district societies are now organized, and the membership of the state society has more than doubled in the past year.

FIRST (ABERDEEN) DISTRICT SOCIETY.—This society, which has been in active work for about fifteen years, at its last meeting, held in Aberdeen, January 19, abandoned its old constitution and by-laws, and adopted those recommended by the American Medical Association. It now has a membership of 62 and holds meetings on the third Tuesday of alternate months. The following officers were elected: Dr. Charles B. Mallery, Aberdeen, president; Dr. Lynn A. Pickering, Warner, vice-president; Dr. Henry J. Rock, Aberdeen, secretary, and Dr. Robert D. Alway, Aberdeen, treasurer.

Society Proceedings.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-Eighth Annual Meeting, held in Albany, Jan. 26-28, 1904.

The President, Algernon T. Bristow, M.D., Brooklyn, in the Chair.

THE ADOPTION OF THE UNION PLAN.

President's Inaugural Address.

On Tuesday, January 26, the society was called to order and addressed by the President, Dr. A. T. Bristow. He said that 673 delegates and 462 members, or 1,135 persons, constituted the present membership of the state society. The total membership of the county societies was 5,680. It was estimated that the membership of the consolidated state medical organizations would be 5,700. He discussed other society matters, and called attention to the desirability of issuing a monthly journal instead of the annual transactions. He urged the part that the profession should have in the great medical problems before the state, and closed by emphasizing that the long-sought opportunity for union of the profession in New York was here.

Report of the Committee on Consolidation.

DR. HENRY L. ELSNER, Syracuse, read this most important report. It was very long, but was listened to with great interest. As we stated last week, it detailed the steps of the attempt at harmony, gave the means by which it had been brought so near, and included the new constitution. The report was also circulated in printed form.

Dr. Jacobi's Address.

DR. A. JACOBI, New York, chairman of the Joint Committee, then made an address in which he moved the adoption of the report. He urged all to catch the spirit of the hour, and seize this great opportunity to restore harmony to the ranks of the profession in this state. He spoke as follows:

"The report of the chairman of your Committee of Five encloses the work of the Joint Committee of Ten. As *its* chairman, I rise to add a few remarks to the complete historical review you have listened to. I do so with the expression of the most intense gratification, for it has never been my lot to assist at the labors of any body of men more engrossed by their work than has been this committee laboring for the consolidation of the two large state bodies.

"The report before you gives no idea of the time and efforts required by the task entrusted to this committee. At first it seemed we had plain sailing. Nothing appeared to be simpler than to consolidate two corporations eager to be consolidated. A large amount of detail work was expected, but the enthusiasm exhibited in the association and in the special October meeting of the medical society promised an easy fulfillment of our common intentions and wishes. There was perfect harmony. There never was an allusion to past difficulties, controversies or animosities; nor was there during the many and protracted meetings a single minute disturbed by the rumors spread now and then of alleged attempts at thwarting the will of the profession as represented in the joint committee. Its two halves worked with equal zeal. Naturally, the actual work could not be equally divided; without invidious discrimination, therefore, the chairman wishes to thank two members for the unusual amount of labor cheerfully undertaken and successfully carried out, namely, the chairman of your Committee of Five, Dr. Elsner, and the secretary of the joint committee, Dr. Wisner R. Townsend. Nor should I pass by the uninterrupted and unselfish aid unofficially given by our president, Dr. Algernon T. Bristow, and our legal counsel, Mr. Howard van Sinderen, without whose indefatigable cooperation and fertile resourcefulness we should have stranded many times. In connection with this statement, I wish it to be understood that whatever has been done by your committee, whatever has gone before the legislature, or has been presented to you, has been scrutinized, suggested, criticised or created by him.

"The legislature has not been slow in appreciating and rewarding the efforts of the medical profession in behalf of its unification. Those of us who lived in by-gone times and participated in the work of this society are aware that it took years of strenuous effort and persistent persuasion to convince legislators of the importance and general usefulness of state boards of examiners, of increased requirements for the matriculation in medical schools, etc. When at those different times we approached the legislatures we were always confronted with the reproach that the medical profession was no unity; that what one wanted the other opposed, and with the fact that legislators declared themselves unable to decide a question in regard to which medical men were not of one mind. We were told many times that if and when the medical profession came before the legislature as a united body with demands either in its own or the people's interest—both, as a rule, being identical—there would be no delay in complying with its wishes. That promise has been made good. Within a week

the permissive bill asking for consolidation has been passed through the senate and the assembly, and signed by the governor. Our thanks are due to the kindly services of the Hon. Nathaniel Elsberg, and his and our friends in the senate and assembly, and the Governor, the Hon. B. B. Odell. Evidently there is no power in the land that would care to evade, or to disapprove, or claim a just ground to withstand the reasonable demands of the 11,000 physicians of the Empire State when united for a common purpose.

"The legislatures of the future will be glad to know that whenever a bill will arrive that is voiced by the united profession and deals with the sanitary, educational and other vital interests of the people of the state, they are safe in passing it. The mature judgment of the profession has not easily been mistaken. Indeed, whatever progress has been made in the scientific and moral evolution of the medical profession has been accomplished by the combined efforts of its rank and file, without the co-operation, and frequently against the opposition, of some medical schools or of alleged and self-complacent leaders. That is as it should be in a profession which is imbued with the democratic principles of the commonwealth, and with the consciousness of its predominant weight in the determination of the most vital interests of mankind.

"From the report read you learn that the consolidated medical profession will bear the time-honored name of the Medical Society of the State of New York; that its seal will be preserved; its continuance not interrupted, and the individual rights of members enhanced. There will be no privileged class of almost five hundred permanent members, some of whom have even lost their membership in county societies, and no danger from a possible predominance of such an aristocratic class. The house of delegates will count at least 150 members, in place of the nominating committee of nine. It can not elect its own members into offices. It is controlled by the referendum, which means an appeal to the total membership of the society in any doubtful or contested case. It takes the place of Congress in our political commonwealth. To it are referred legislation and administration, and it is renewed by annual election in the county societies according to the number of assembly districts, with this proviso, that every county society has at least one delegate. By being the legislative body, it leaves the meetings of the society free for its scientific work. The constitution and by-laws, formed under the eyes of legal authority, are safe from interference, and are subject to changes by the majority vote of the medical society.

"This is what is proposed for your adoption. Other points are referred to the future vote of the combined societies, so the question whether there shall be in the by-laws an ethical clause, whether the directory or journal or transactions shall be continued or not and the amount of dues. All this will be left for your five or six thousand votes to decide.

"You who met here as delegates or permanent members are in as momentous a position as any that the medical society was ever placed in during the century of its existence. Unification has been the demand of the vast majority of the profession of our state so long that it has become practically unanimous. Not of the state alone, however. The profession of the United States is listening to your verdict of this morning. While it is our pride that this is so, and that on our resolution the fate of the country's profession may depend—to know that the eyes of our brethren all over this broad land are on us this very moment, adds to our responsibility. Never was there during the life of this society a better opportunity for the display both of wisdom and of patience.

"It is admitted on all sides that both patience and wisdom are demanded more on the part of the medical society than of that of the association. The latter's organization is simpler and, being younger, it is not beset with old, in part contradictory, often repealed, frequently only half repealed laws extending over a hundred years. The autonomy of the county societies, which the joint committee has been anxious to preserve, unless wisely exercised, creates a difficulty. As their ratification of the new constitution and by-laws is demanded as a matter of course, their common sense, patience, wisdom and patriotism are required to a high degree. They will consider that laws are not made forever; they are not the masters of man, but the expression of their will as modified by time, usages, and changed necessities. Even the sacred constitution of the United States had to be modified by the modern requirements of the sons and grandsons of its makers. That is why it is recommended that if there be any points in the proposed constitution and by-laws displeasing one or the other, you are still safe in adopting them all. There are six thousand of us, and there will be more. Every year your constitution and by-laws may be altered if you deem proper. Your delegates will change, and your referendum is more powerful than any house of delegates. What we are after is union. More than once a member of your joint committee got up to say: 'We have been sent here to harmonize and to unify and to consolidate. We can not return to our masters and tell them we have missed our opportunities to execute their will. I still hear the ring of enthusiastic applause when the unanimous vote calling for unity brought a tear to many an eye. And unity it shall be.' I never heard the duties of sound citizenship expressed more emphatically.

"After unification, we shall be satisfied that nothing will ever sever us again. For there will never again be a diversity of principles like twenty-two years ago. There will be a common faith, aim and altar. We shall take in the medical brotherhood the place which belongs to us, and work for the ideals, scientific, moral and practical, such as no other profession can realize, together with our peers all over the Union. We must or need split up into parties nevermore. To the undivided and indivisible body medical the American people will look for authoritative guidance in matters of sanitation, education and forensic legislation. What a Greek sage demanded should and may become true, viz., that the commonwealth will be advised and ruled by the physician. It is in this spirit that I appeal to you not to miss this opportunity of initiating for our glorious profession an epoch of fraternity, vastly increased usefulness and almost ideal possibility for benefiting ourselves, our brethren, and numerous millions. I appeal to you as one of your oldest members who has stood by you in prosperity and distress, in peace and war; and long and lately as a friend of reconciliation and union of the two great medical bodies of the state. The confidence both of your own committee and that of the association has permitted me to preside over their long and laborious deliberations. That is why I feel I have a right to represent in this solemn hour the whole profession of the state in its anxious longing for consolidation, not as an officer, or a delegate, but as a peer among peers. That is, Mr. President, why I have risen to move the adoption of the following resolution:

Resolved, That the report of the Joint Committee of Conference be accepted and that the proposed agreement for the consolidation of the Medical Society of the State of New York and the New York State Medical Association be and the same is hereby approved, and the president of the society is hereby authorized and directed to execute the same in the name and behalf of the society, and the secretary is hereby authorized and directed to affix the corporate seal thereunto; and be it further

Resolved, That the committee of the society heretofore appointed for the purpose of bringing about the consolidation, namely, Dr. Henry L. Elsner, Dr. A. Jacobi, Dr. A. Vander Veer, Dr. George R. Fowler and Dr. Frank Van Fleet, be and they are hereby continued as such committee, with full power and authority to do whatever may be necessary to carry the agreement into effect.

The motion of Dr. Jacobi was seconded by Dr. D. B. St. John Roosa, and following him, Drs. William Warren Potter, Willis G. Macdonald and Roswell Park spoke in favor of the motion, and urged unanimous action. The resolutions were then enthusiastically adopted without a dissenting vote. It was then ordered that the report of the committee be printed and a copy sent to each member.

THE SCIENTIFIC PAPERS.

The papers read at this meeting were of a high quality. There were three subjects on which there were symposiums, diabetes, nephritis and abdominal pain, and on which there was valuable exchange of opinion.

Symposium on Diabetes.

DR. R. M. PEARCE, Albany, discussed the pathology of diabetes, and was of the opinion that all forms of diabetes were not due to disease of the pancreas.

Physiologic Chemistry of Diabetes.

DR. DAVID EDSALL, Philadelphia, discussed the various theories. He thought there was much to be learned concerning the nature of different varieties of sugar. In diabetes there might be a defect in glycogen construction or an excessively rapid conversion of glycogen into sugar.

Medical Treatment of Diabetes.

DR. WILLIAM H. THOMSON, New York, was averse to prescribing the opium derivatives in diabetes, firmly believing that no permanent good could possibly follow the use of medicines of this class. He had for many years made use of cod liver oil, and had found it very beneficial except in the obese form or in those leading a very sedentary life. Arsenic was also useful. In severe cases, he began by giving 15 grains each of antipyrin and benzoate of sodium four times a day, changing after a time to 15 grains of aspirin and 10 grains of bismuth salicylate. Alkaline waters were often useful, but if used freely for a long time they would hasten emaciation.

General Management of Diabetes.

DR. F. C. SHATTUCK, Boston, said that the diet should be regulated, not only as to the articles of food, but as to the quantity of each. In the milder cases, after one or two months of a strict diabetic diet, it might be proper to cautiously test the patient's ability to take starch, but a much longer time would be required in more severe cases. If diacetic acid and acetone were present in the urine, a radical change in the diet would be dangerous. The diabetic should be warmly clad, and while having rest of body and mind should have a moderate amount of exercise.

The Occurrence of Diabetic and Non-Diabetic Glycosuria in the Same Individual.

DR. HEINRICH STERN, New York, read this paper. His conclusions were: (1) The diabetic state may be established before glucose is excreted by the urine: (2) glycosuria is a symptom of many other disturbances, both ectogenous and endogenous; (3) with the aid of other disturbing factors it is possible to differentiate between the diabetic and non-diabetic form; (4) duplex mellituria is the result of two concurrent or intercurrent affections of dissimilar character, having glycosuria as the one symptom in common, and (5) duplex mellituria depends on the alternate prominence of one set of symptoms, including glycosuria.

Addresses by Drs. Bristow and Hadley.

Tuesday evening two excellent addresses were given. The president's annual address, by Dr. Algernon T. Bristow, Brooklyn, was on "The Present Status of the Medical Expert," and clearly laid the burden of the present medicolegal difficulties on the legal profession. This address will appear in THE JOURNAL shortly.

The other address, on "Conflicting Claims of General Education and Professional Education," by Arthur T. Hadley, LL.D., president of Yale University, is given elsewhere in this issue.

Officers Elected.

The following officers were elected: President, Dr. Hamilton D. Wey, Elmira; vice-president, Dr. Joseph D. Bryant, New York; secretary, Dr. Frederic C. Curtis, Albany; treasurer, Dr. O. D. Ball, Albany.

The society voted in favor of holding semi-annual scientific meetings successively in Buffalo, Rochester, Syracuse and New York.

(To be continued.)

THE BALTIMORE TUBERCULOSIS EXPOSITION.

Held at McCoy Hall of the Johns Hopkins University, Jan. 25-30, 1904.

This great exposition, described by some as the greatest presentation of the subject ever given, was held under the joint auspices of the Tuberculosis Commission of Maryland, the State Board of Health of Maryland, and the Maryland Public Health Association. It was illustrated by charts, photographs, diagrams, models, instruments, tests, pathologic specimens, lectures, etc., and covered the history, distribution, varieties, causes, cost, prevention and cure of tuberculosis.

The Addresses.

The formal opening was held at 8:15 p. m. January 25, when addresses were delivered by Governor Edwin Warfield, by Hon. Robert McLane, mayor of Baltimore; by Prof. William Osler, and by Mr. Frederick Hoffman of Newark, N. J. The governor highly commended the unpaid work of the Tuberculosis Commission, of which Dr. William S. Thayer is president, and spoke of the exposition as "the clinical and supplementary report of the commission." He promised that he would "gladly co-operate in the measures proposed." The mayor urged personal work and the receiving of appropriations from the legislature. Dr. Osler spoke of the apathy of the citizens, from which it seemed almost hopeless to arouse them. Mr. Hoffman, who is the actuary of a large life insurance company, spoke from large statistics. He assigned ten specific reasons for the marked but gradual reduction in the death rate from consumption in the last fifty years, viz.: The vast and far-reaching improvements in the housing of the population of large cities; the vast improvements in the direction of providing tenements and dwellings with more light and better ventilation; the diminution in the evils of overcrowding; the improvement in the morals of the people, making for a lesser degree of gross intemperance; improved methods of feeding of infants and adults with food of more nutritious quality, making for the building of a body of a higher degree of disease-resistance; improved economic conditions, especially in the direction of higher wages and shorter hours of labor, substituting possibilities of rest and recreation for overstrain and bodily exhaustion; the prohibition of child labor at early ages, making for constitutions better able to withstand the inherent disease-producing conditions of factory life; far-reaching improvements in the sanitary conditions of factories as the result of systematic factory inspection and an intelligent public health administration; improvements in school hygiene providing for children at the critical-age period more room, more light and better ventilation than was formerly the case; and, finally, a tendency toward a higher standard of life and a more deliberate view of life and the value and worth of living. The decrease in the death rate from consumption in American cities was from 32.5 per 10,000 in 1871 to 19.2 per 10,000 in 1900. Mr. Hoffman then went on to speak of race, marriage, occupation, religion, etc., and showed how all these were concerned in the prevalence and mortality of consumption. The high mortality of the colored race, which is 49 per 10,000, to 17 per 10,000 in the whites, was dwelt on, and is not to be explained solely by unfavorable surroundings, but is due to racial differences, to a less vigorous vital resistance on the part of the negro. The native population of native stock shows the lowest mortality from consumption, while the Irish show the highest. From 15 to 34 years, one-third to one-half of the total mortality is from consumption. Many interesting points were brought out with reference to marriage, occupation and religion.

The second day's address was made by Dr. Lawrence F. Flick of the Phipps Institute, Philadelphia, who spoke on "House Infection of Tuberculosis." He laid great stress on the house as an agent of infection, and said that practically contagion is limited to it. In proper house disinfection is to be found the key to the entire problem of stamping out tuberculosis.

On the third evening the addresses were by Dr. Mazyck P. Ravenel of the University of Pennsylvania and Dr. D. E. Salmon, chief of the Bureau of Animal Industry, Department of Agriculture, Washington, D. C. With reference to transmission from man to cattle, Dr. Ravenel said this was first proven in 1868 by Chaveau, who selected only animals from the Jura Mountains, where the disease was unknown. Direct experimental evidence of transmission from cattle to man is wanting, but several such cases had occurred under his observation from accidental inoculation, some ending in general infection and death. Transmission by injection of tuberculous

meat, however, is difficult to prove, as we can not exclude all other sources of infection. Yet the evidence of this is as good as in cases which we admit to be by inhalation. The bovine organism has also been found in the intestines of children dead of intestinal tuberculosis. The chief difference between the bovine and human bacillus is their relative virulence, this being vastly greater in the former. We are justified in saying that bovine tuberculosis is transmitted to the human race, chiefly to infants, in a certain, at present undeterminable, proportion of instances and is, therefore, a menace to public health. Dr. Salmon gave the results obtained on this subject by himself and assistants in Washington.

The fourth day's address was made by Dr. S. A. Knopf of New York, who said that consumption is curable by pure air, pure food and pure water; that it is not hereditary and that it is communicated by inhalation, ingestion and inoculation. He showed several forms of spittoons. He spoke of the danger of kissing, putting fingers and pencils in the mouth, and expectorating on the floors. Dr. Knopf continued with many practical suggestions, and urged that philanthropists could find their best opportunities for doing good in this field.

The fifth day's address was by Dr. George Adami, Montreal, on "Facts, Half Truths and the Truth about Tuberculosis." He pointed out the difference between many popular conceptions and the real facts as regards this great scourge.

On the sixth day Professor Welch spoke, and Dr. Charles H. Potter gave demonstrations with the lantern of the pathology of tuberculosis. A similar demonstration by Dr. Huber of New York concluded the exposition in the evening.

The Exhibit.

The exhibit was held in the corridors, in a room opening into these and in the lower part of the large McCoy Hall. Statistics were much in evidence, nearly 100 charts being shown. Many of the facts brought out in the address of Mr. Hoffman were here graphically exhibited. The relations of factory, tenement and sweat shops to tuberculosis were next shown, and the conditions prevailing in Baltimore, New York, Boston, Chicago, etc., were pointed out by photographs.

Especially valuable was the exhibit of prophylactic measures employed by state and municipal boards of health. Pictures of sanatoria and dispensaries, both native and foreign, illustrated the most modern and approved methods of treatment. There were many models of tents, one of the most observed being the Fisher tent, fully equipped for patient and attendant. This was pictured and described in THE JOURNAL, Dec. 26, 1903. Other models of tents were the Gardiner, from Colorado Springs and another which is used successfully on the health farm of the Young Men's Christian Association near Denver.

There was a series of photographs showing infected streets and houses in Baltimore; another set showed how in the treatment the colony idea, the roof garden, the fire escape, the veranda could be converted to the use of the consumptive. The committee on Home Treatment and House Hygiene exhibited a model room furnished in all its details, and near this was an exhibit made by the Visiting Nurse Association. A large collection of books and portraits was shown in glass cases illustrating the history of tuberculosis from the earliest times down to the present.

The pathologic section consisted of specimens of tuberculous tissues and organs in man and animals, wax casts, etc., derived from the Army Medical Museum and from the museums of the University of Maryland, the Johns Hopkins Hospital, the Baltimore College of Physicians and Surgeons, and the city and state health departments.

A large map had been prepared by the health board, showing all the houses in which there has been a death from tuberculosis in the 10 years from 1890 to 1900. Each of these 11,582 deaths is indicated by a red dot. "Lung block," the worst area, consisting of two squares crowded with negroes, shows 175 deaths. The sweatshop pictures were very impressive. Among the institutions, etc., exhibited were the health departments of Chicago, New York City, Baltimore and Boston; Loomis Cottage Sanatorium, New York; Muskoka Sanitarium, Canada; Massachusetts State Sanatorium; Sharon Sanatorium; Stoneywold Sanatorium; Blackwell's Island Hospital; National Sanatorium, Canada; Bedford Sanatorium, etc. The "City Hall and Court House Sputistics" of Dr. Fulton were original and suggestive.

Sufficient to say, the exposition, unique in its way, was a perfect success. Crowds of people thronged the corridors during the entire week, hundreds stood during the lectures and hundreds were turned away unable to gain entrance to the large hall. Such an outpouring of people was remarkable and unexpected, and the attention, interest and enthusiasm with which they listened to the speakers and minutely examined the exhibits gives the greatest encouragement.

The arrangements were admirable. Dr. Fulton and his assistants were always at hand to pilot the crowds and visitors about and explain everything to them.

Many physicians and sanitarians from all parts of the United States and Canada were in attendance.

Action on Tuberculosis Congresses.

At a conference held in McCoy Hall on the evening of January 28, presided over by Prof. William H. Welch, Baltimore, at which a number of representative physicians interested in the study of tuberculosis from various parts of the country were present, the following motion made by Dr. H. M. Bracken of St. Paul, Minn., and amended by Dr. William S. Thayer, Baltimore, was unanimously adopted: "Moved that the chair be authorized to appoint a committee with power to act, to consider the conditions existing with regard to the proposed tuberculosis congress and other national antituberculosis associations in the United States, also to consider the formation of a national committee to represent this country at the International Congress at Paris, and that the members of this conference will abide by the action of the committee—also that this committee have power to add to its membership."

In accordance with this motion, Prof. William H. Welch appointed the following gentlemen to this committee: Dr. William Osler, Baltimore; Dr. Edward L. Trudeau, Saranac Lake, N. Y.; Dr. Theobald Smith, Boston; Dr. J. G. Adami, Montreal, Canada; Dr. Vincent Y. Bowditch, Boston; Dr. S. A. Knopf, New York City; Dr. Marxck P. Ravenel, Philadelphia; Dr. Arnold C. Klebs, Chicago; Dr. Edward G. Janeway, New York City; Dr. Henry Barton Jacobs, Baltimore; Dr. H. M. Bracken, St. Paul, Minn.; Dr. Lawrence F. Flick, Philadelphia; Dr. Herman M. Biggs, New York City.

Therapeutics.

[Our readers are invited to send favorite prescriptions or outlines of treatment, such as have been tried and found useful, for publication in these columns. The writer's name must be attached, but it will be published or omitted as he may prefer. It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Rhus Toxicodendron Poisoning.

The following combination is recommended by *Med. Pharm. Critic and Guide* in the treatment of ivy poisoning:

℞.	Sodii hyposulph.	℥i	30
	Menthol	gr. v	30
	Alcoholis	℥i	4
	Spts. etheris nitrosi	℥i	30
	Aq. destil. q. s. ad	Oi	500

M. Sig.: Apply locally with a soft sponge or on sterilized gauze.

Formaldehyd.

Wainwright, in *Med. Mirror*, in speaking of formaldehyd as an antiseptic, germicide, disinfectant and deodorizer, states that the 40 per cent. solution, formalin, in 1-32,000 dilution preserves milk for several days; 1-25,000 strength is useful as a douche in leucorrhea; 1-3,200 for rinsing dairy cans;

1-2,000 for rinsing vessels intended for liquids liable to fermentation; 1-500 for irrigations of catheters and for mouth wash; 1-250 as a general disinfectant, solution for washing the hands, instruments, spraying sick-rooms, and as a deodorant. In the treatment of lupus, psoriasis and other skin diseases, it should be used in strength of 1-100.

The author also recommends formaldehyd in the treatment of hyperidrosis of the feet, in whooping cough and diphtheria, using a vapor or spray of 1 per cent. strength in the latter diseases. It is also of service in relieving the conditions in atrophic rhinitis and ozena, using it in dilute solutions applied locally after the application of cocain to the mucous surfaces. In the treatment of carcinoma of the cervix, with fetid discharge and severe hemorrhage, a 20 per cent. solution acts as a hemostatic, diminishes the discharge, fetor and pain. In cases of pharyngitis and tonsillitis, it is of value combined in diluted strength with glycerin. In chronic otorrhea, the ear may be syringed out daily with a formalin solution in the proportion of one dram to the pint (4.-500). As antidotes to formalin in cases of poisoning when given internally, a few drops of aqua ammoniæ well diluted, aromatic spirits of ammonia or liquor ammoniæ acetatis have proved to be very efficient.

Creosotal in Croup.

Lazansky, in *Med. Council*, recommends the following combination containing creosotal in the treatment of croup contracted by children between the ages of five and ten years:

℞. Creosot.	gr. xlv-3i	3-4
Liq. ammon. anis.	m. xv	1
Syr. senegæ	ʒss	15
Infus. ipecac. rad.	ʒiss-ʒiii	45-90

M. Sig: One teaspoonful every hour until fever diminishes, then every two to three hours.

Empyroform.

Skarlek, according to an abstract in *Amer. Med.*, has found empyroform to be beneficial in the treatment of eczema. It lessens the itching, has marked drying properties, and is non-irritant. It is useful in all stages of eczema. He employs the following combination:

℞. Empyroform		
Pulv. amyli, ää	ʒvi	24
Liq. petrolati	ʒiss	45

M. Ft. unguentum. Sig.: Apply locally.

Empyroform is a combination of tar and formaldehyd. It is a brown powder with tar-like odor, insoluble in water but soluble in caustic alkalies and chloroform and liberates formaldehyd when heated.

Pertussis.

The following combination is recommended by J. S. Howard, in *Med. Council*, in the treatment of whooping-cough:

℞. Acidi nitrici dil.	ʒi	30
Tinct. card. co.	ʒiii	12
Syrupi simplicis	ʒiiiss	100
Aquæ	ʒi	30

M. Sig.: One small teaspoonful every two hours.

The foregoing is especially recommended in infants, who have been exposed to the disease, as a prophylactic measure.

Broncho-Pneumonia.

The following combinations are recommended in *Clin. Ther.*, in the treatment of catarrhal pneumonia:

℞. Ammonii chloridi	gr. lxxx	5
Syr. scillæ	ʒiii	12
Liq. ammon. acetatis q. s. ad	ʒiv	120

M. Ft. mistura. Sig.: One dessertspoonful in water every three to four hours.

One or two drops of the tincture of aconite may be added to each dose of the foregoing, carefully watching its effects; or:

℞. Ammon. carb.	gr. xlv	3
Mucil. acaciæ		
Syrupi simplicis, ää	ʒss	15
Tinct. lavendulæ comp.	ʒii	8
Aquæ q. s. ad	ʒiv	120

M. Sig.: One teaspoonful in water every three hours to a child three years of age.

In cases where there is threatened respiratory failure the following may be substituted:

℞. Quin. sulph.	gr. xxiv	2|60
Strych. sulph.	gr. 1/4	|015
Acidi hydrochlor. dil.	m. xv	1 |
Glycerini	ʒiii	12
Liq. pepsini q. s. ad	ʒiv	120

M. Sig.: One teaspoonful in water every three or four hours for a child five years of age; or:

℞. Strych. sulph.	gr. 1/4	|015
Acidi hydrochlor. dil.	ʒi	4 |
Spts. chloroformi	ʒiv	15
Ext. cinchonæ liq.	ʒiii	12
Aquæ q. s. ad	ʒiv	120

M. Ft. mistura. Sig.: One teaspoonful for a child five years of age, every three or four hours.

Enterocolitis.

A. Robin, in *N. Y. and Phila. Med. Jour.*, states that medication should be so directed as to render the gastric contents alkaline before being pushed on into the intestine. For such purposes the following combination is recommended:

℞. Calcii carb. precip.		
Magnesiæ (calcined), ää	ʒiss	6
Sodii bicarb.	ʒi	4

M. Ft. chart. No. xii. Sig.: One after each meal.

Between the meals, to render the pain less, the following is advised:

℞. Lactose	gr. xv	1 |
Magnes. oxidi hydratis	gr. xxiiss	1|50
Bismuthi subnit.		
Cretæ prep., ää	gr. xii	|75
Codeinæ	gr. 1/12	|005
Sodii bicarb.	gr. xv	1 |

M. Ft. chart. No. i. Sig.: As indicated to relieve the pain.

Milk alone is not recommended. The diet should include thin soups, bouillons, broiled or roasted meat without sauces, boiled fish and boiled vegetables. A glass of ale may be given once a day. Colonic flushings with boiled water should be given daily and very slowly with low pressure. Saline purgatives are contraindicated. Castor oil may be given in combination with extracts of belladonna and hyoscyamus. In some cases the following is preferable:

℞. Ext. aloes (Capa)	gr. xxx	2 |
Pulv. jalapæ	gr. xv	1 |
Res. scammonii		
Res. cambogiæ, ää	gr. xv	1 |
Ext. belladonnæ		
Ext. hyoscyami, ää	gr. iiss	|15
Pulv. saponis, q. s.		

M. Ft. pil. No. l. Sig.: One to three pills at bedtime.

The author recommends cold compresses to the abdomen, and allowed to remain in place all night. Massage is also of benefit in these cases.

In prolonged painful paroxysms, avoid opium preparations and substitute cannabis indica as follows:

℞. Ext. cannabis indicæ		
Ext. hyoscyami		
Ext. belladonnæ, ää	gr. ss	|03
Menthol	gr. iss	|09
Alcoholis, q. s.		
Syr. acaciæ q. s. ad	ʒv	150 |

M. Sig.: One tablespoonful every hour.

Locally the following liniment may be applied to the painful spots:

℞. Spts. chloroformi	ʒv	20 |
Ext. belladonnæ		
Ext. hyoscyami		
Ext. cannabis ind., ää	ʒi	4 |
Linimenti saponis	ʒiii	90

M. Ft. linimentum. Sig.: Apply locally as indicated.

Tonics in the Convalescent Stage of Febrile Diseases.

The best general tonic after an acute illness, according to A. Caillé in *Post. Grad.*, is a change of air from the city to the country, from the mountains to the seashore, and vice versa. Diet and regulated digestion, exercise, massage baths

and proper surroundings are of importance. The administration of dilute hydrochloric acid after meals will aid the digestion; and a normal digestion and nutritious diet will soon improve the composition of the blood. He recommends the following method of administering hydrochloric acid in such cases:

℞. Acidi muriat. dil. .....3iv 15|
Sig.: Five to ten drops in sugar water after eating; or:
℞. Acidi muriat. dil.
Tinct. nucis vom., ää.....3ii 8|
M. Sig.: Five to ten drops in sugar water after eating; or:
℞. Acidi muriat. dil. .....3i 4|
Essentiæ pepsini .....3ii 60|
M. Sig.: One teaspoonful after eating, three times a day.

He recommends, before administering iron, arsenic, phosphorus or other drug tonics that the tongue be cleaned.

To improve the anemia he recommends the following combinations:

℞. Tinct. ferri muriatici .....3i 4|
Elix. gentianæ comp. .....3ii 60|
M. Sig.: One-half to one teaspoonful three times a day; or:
℞. Elix. calisayæ cum ferro et strych.....3ii 60|
Sig.: One half to one teaspoonful three or four times a day.

In such cases he also recommends the glycerophosphates and hypophosphites of iron.

Arsenic is of value given in the form of Fowler's solution, one to five drops (.06-.30) diluted in water after meals.

Phosphorus given in the form of Thompson's solution or elixir of phosphorus may be given to children in ten to twenty (.65-.13) drop doses in water three times a day.

Medicolegal.

Eighty Thousand Dollars for Personal Injuries.—In International & Great Northern Railroad Company vs. Moynahan, a personal injury case brought by the latter party, an engineer, who was 38 years old, sound and earning $140 to $150 a month when injured, the Court of Civil Appeals of Texas holds that a verdict for $80,000 damages was warranted by evidence that he hovered between life and death for many months, suffering great agony, became a physical wreck, unable from his spinal injuries to move his head or preserve his balance naturally, was never without pain, was totally incapacitated for labor, one side was paralyzed, and his tendency was to grow worse.

Injury to Practice and Use of Morphin by Wife.—The Supreme Court of Georgia holds, in the case of Smith vs. Smith, that, in the trial of an action for divorce, brought by a husband against his wife on the ground of alleged cruel treatment, it is not error to reject evidence that she constantly quarreled with, abused and insulted her husband, and, by slandering him to her neighbors, injuriously affected his practice as a physician, etc. Nor is it error, in the trial of such a case, to reject evidence that the wife was an habitual user of morphin, and almost all of the time under its intoxicating influence.

Transportation of Insane Persons.—The Supreme Court of Georgia, which finds no authority directly in point, holds, in Owens vs. Macon & Birmingham Railroad Company, that the carrier can not absolutely refuse transportation to an insane person, but it may in all cases insist that he be properly attended, safely guarded, and securely restrained. And even where such precautions have been taken, it is not bound to afford him, if violent, transportation in the cars in which other travelers are being conveyed. And while there may be cases in which the convenience of other passengers should yield to the necessities of the unfortunate, the company may decline to receive one who at the time of entering the train exhibits signs of violence which indicate that his presence and conduct would tend to the manifest annoyance of others. So to do would ordinarily be better than to receive him on the promise of his attendants that he would be quiet, and, on the disorder continuing, force on the carrier the duty of deciding whether he should be ejected at a station where there might not be proper accommodations. Where, however, it becomes essential to transport one who, though violent and noisy, is not responsible for his actions, the company is entitled to seasonable notice, in order that it may make proper arrangements.

An Inmate of a Hospital.—In the case of Farrel vs. Security Mutual Life Insurance Company, the insured was asked if he had ever been an inmate of any hospital, and answered, "No." But it appeared that he had been admitted to a hospital, where he remained for from one to two weeks. A physician testified that he had visited him professionally, and suggested his removal to the hospital; that he went to the hospital, and examined him for twenty minutes to half an hour very carefully; that he was accepted at the hospital as his private patient. The physician further testified that he found nothing the matter with the man; that he made an entry of rheumatism in order to qualify him to be entered at the hospital, and that he ordered his removal to the hospital because he could give him better care, and under more satisfactory circumstances, than he would receive where he was. He explained that by better care he meant "better environment"—under better conditions—and that by "better conditions" he meant, "Well, if he touched a button he could have a servant come to his room any time day or night, or if he wanted a change of blankets, or a hot drink—any want could be attended to at once; that he sent him there to put him where he could get good bed and board." The United States Circuit Court of Appeals, Second Circuit, holds that, even if the question could be considered, as contended, as an inquiry whether the insured had been admitted to the hospital for medical treatment for disease, the uncontradicted evidence as to the circumstances under which he was taken there under advice of a physician as his patient, and the character of his occupancy, satisfied this requirement. And in view of the positive statements of the physician as to said facts the court would not have been justified in submitting the case to the jury on the theory of ambiguity or uncertainty because the witness said he sent him there simply "to get good bed and board." If this statement be not rejected as either palpably untrue or an unjustifiable conclusion of the witness, it must be so interpreted as to apply to the case of a patient who required the sort of treatment implied by better conditions, environment, and service.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.
January 23.

1 *Acute Lobar Pneumonia: An Analysis of 486 Cases, and of 100 Autopsies. John McCrae, J. C. Frahe and W. E. Ainley.
2 *The Blood in Acute Leukemia. Louis V. Hamman.
3 *A Comparative Study of Fractures of the Extremities. M. I. Wilbert.
4 *Fracture-dislocation of the Spine. J. Shelton Horsley.
5 *Physical Overexertion and Its Effects on Health. John Knott.
6 *The Modern Treatment of Wounds. Walter Lathrop.
7 *A Bacteriologic Study of the Intestines of Fish. Edith Loeber.

1. **Pneumonia.**—This article is an analysis of cases as regards sex, mortality, etiology, race, occupation, previous disorders, use of alcohol, duration, course, complications, symptoms, etc., followed by an analysis of a hundred autopsies. The authors find the fatality of the disease very markedly increased after the age of 40, though the number of cases is much greater in younger subjects. It is policy, however, to make no prognosis on youth, as the average age of the patients who died was 37.7 years, while that of those that recovered was 35.5, showing a much less difference than one would suppose. It would also appear from these statistics that immigrants, at least in the climate of Montreal, are three times as liable as natives to the disease, and that the outdoor worker is much more frequently attacked. The question of the liability of alcoholics to pneumonia is complicated by other questions, so that it is impossible to give positive figures. In the majority

of cases the fever rises to 102 or 104, and in quite a proportion to over 104, in the early stages. Leucocytosis occurred in 43 out of 45 cases examined, and in the 11 patients who died there were from 9,800 to 50,000 leucocytes, but in 5 of these there were severe septic complications. It would appear that the extent of the disease had much to do with the fatality; the smaller amount of lung tissue involved, the more favorable prognosis. The treatment was varied. In 40 cases there was practically no treatment. Baths were used in 45 cases; expectorants given in one-third; medicinal analgesics, heroin, etc., in a tenth of the cases; ice and heat in one-fourth; stimulants in three-fourths, and venesection was performed in only one case. There seems to be a prevailing tendency to symptomatic treatment with ready recourse to stimulants. In 60 cases where bacteriologic examinations were made, 65 per cent. showed the presence of the pneumococcus, in 5 per cent. of which it was mixed with other organisms to the extent of being a mixed infection; 20 per cent. were mixed infections of other kinds, while the streptococcus was the main agent in 8 per cent. The infrequency of the rigor at onset is also notable in this series, as also the non-enlargement of the spleen, from which it appears that pneumococcus infection is less likely to be accompanied with this complication.

2. **The Blood in Leukemia.**—Hamman reports several cases with careful blood examinations and discusses the literature. He concludes that there are three types of leukemia, each associated with a typical clinical picture. Between the blood pictures and the clinical pictures there is every grade of transition. Leukemia running an acute course is nearly always associated with the blood picture described by Fraenkel. When the blood picture described by Fraenkel is observed, it is almost certain that the case will run an acute course. The presence of either of the other typical blood pictures is an assurance—however, not absolute—that the disease will run a chronic course.

3. **Fractures of the Extremities.**—Wilbert insists on the importance of joint involvement in fractures, and says too much stress can not be laid on caution in handling of the part in case of injury near the articulating surfaces of the bone. He thinks that while it must be admitted that the Roentgen rays do not indicate the exact nature of all primary injuries, if properly used they show all serious lesions of the osseous structure and in a number of cases will indicate the nature and extent of injury to the soft parts, particularly when the lesions involve the denser portion of the tendon. Precision and exactness of diagnosis without the risk of injuring the surrounding tissue are practically impossible without the use of the *x*-rays, and without this diagnosis treatment must be uncertain. He favors the more general routine use of this method of diagnosis.

4. See abstract in THE JOURNAL of January 2, p. 53.

5. **Over-Exertion.**—Knott protests against over-strain in physical exercise and its abuse as leading to sudden and permanent breakdown in later life.

6. **Wounds.**—From an experience with over 2,000 wounds of various kinds in the last four years, Lathrop concludes that in ordinary lacerated wounds, the first thing to do is to check the hemorrhage and carefully cleanse the parts. He prefers formaldehyd soap, 10 per cent. to begin with, followed by mercuric chlorid solution and sterile water. The lacerated skin is next trimmed where necessary and the wound converted into an incised one as nearly as possible. The severed tendons are united, the edges carefully sutured, and the injured member dressed with the usual sterile gauze and cotton—dusting powder applied where desirable. A splint may be used when immobility is indicated. The dressing should not be removed for several days unless a fever gives warning of sloughing or infection. In very extensive laceration, oozing must be provided for by a drainage tube or gauze. The ordinary wounds with knives, bottles, sharp edges, etc., require little more than careful suturing and sealing with thorough asepsis. Nearly all scalp wounds of this character may be sewed up and no further trouble experienced. Domestic remedies are responsible for much of the infection. He thinks the ordinary dirty poultice is one of the most important of these. The one great agent in combating infection, preventing it when suspected and checking it, is carbolic acid. If no pus is present he would use a 5 per cent. solution. In case of suppuration he would etherize, make a free incision, use hydrogen dioxid freely and follow with sterile water or salt solution; then mop the entire cavity out with pure carbolic acid and then wash with alcohol, apply the usual dressing and insert drainage if necessary. The patients, as a rule, do well under this treatment; the spread of infection is likely to be checked. If the septic process has invaded the system, the use of antistreptococcus serum is very valuable, in full dose of 10 c.c. repeated once or twice in twenty-four hours. He used it on himself in a severe attack of blood-poisoning, and has employed it in a number of bad cases with good results. In punctured wounds with a valve-like opening the wound should be freely opened to the bottom and cleansed. In gunshot wounds of the abdomen the only thing is immediate laparotomy and suturing up of the perforation. In gunshot wounds of the extremities the Roentgen ray is of help in locating the bullet. In wounds of the chest, provide drainage and wait for Nature to cure, unless there are clear and urgent reasons for operation. The same is true in wounds of the skull and brain, with rigid asepsis and the removal of all spicules of bone.

7. **Fish Microbes.**—Loeber has studied the intestines and made cultures from the perch, bass and suckers obtained from Cayuga Lake and its tributaries. She found an abundance of microbes, chiefly the *B. proteus vulgaris*, which was present in all. The *B. coli* was not found in a single instance.

Boston Medical and Surgical Journal.

January 21.

8 *Clinical Lecture on Epithelioma at Massachusetts General Hospital. J. Collins Warren.
9 *The Prevailing Conception of Degeneracy and Degenerate, with a Plea for Introducing the Supplementary Terms Deviation and Deviate. G. L. Walton.
10 Cancer of the Rectum: Combined Abdominal and Perineal Operation. Charles A. Powers.

8. **Epithelioma.**—Warren describes the characteristics of the different varieties of epithelioma, the superficial types known as rodent ulcer, small-celled epithelioma and the polymorphonuclear-celled type characterized by larger cells with the characteristic nests such as are seen in cancers of the lip, back of the hand, penis, etc. The main part of his paper is devoted to the subject of rodent ulcer. He describes the process of keratosis senilis and reports a number of cases of rodent ulcer. He discusses the relative value of excision and *x*-ray therapy. In the early stages excision is advisable, but when the disease has become extensive and is rapidly spreading, the value of the *x*-ray is marked. The patient should be instructed to yield to the excision treatment, for that is possibly the best and will give reasonable prospect of permanent cure. He also pleads for a more radical operation for cancer of the lip, not only by a most liberal V-shaped incision, but the primary lesion should be dissected away in a continuous mass with the cervical glands and tissue occupying the triangle nearest the seat of growth. Incomplete, "ambulatory" operations, with cocain anesthesia, can not be too emphatically condemned.

9. **Degeneracy and Degenerate.**—Walton criticises the common use of the terms degenerate and degeneracy as signifying more than they ought in cases to which they are applied, and expressing opinions when simple facts are to be noted. Stigmata do not necessarily indicate deterioration, and it is a question whether a limited amount of them may not occur without lowering the mental or physical scale. Downward deviation is not the only type. He suggests the use of the term deviation as indicating variations from the normal, whether above or below or at the same level in the intellectual, physical, moral and other scales. It need not necessarily be limited to the lighter grades of variation. We may have the minor and major deviation, while the use of the word degeneration should be confined to marked downward tendency in the change.

New York Medical Journal.
January 23.

11 *The Dietetic Value of Patented Foods. W. D. Halliburton.
12 *Hepatic Drainage in Infection of the Biliary Tracts. John B. Deaver.
13 *Sterile Water Anesthesia in the Office Treatment of Rectal Diseases. Samuel G. Gant.
14 *Puerperal Sepsis and Its Treatment by Iodin. William R. Pryor.
15 *Public Health and Food Preservatives. (To be continued.) R. G. Eccles.
16 *Some Investigations of a Bacterial Treatment of Tuberculosis. (Continued.) Stephen J. Maher.

11. **Patented Foods.**—Halliburton notices certain common errors in regard to patented or proprietary articles of food, calling attention to the untrustworthiness of mere chemical analysis in some of these cases, and the necessity of testing both *in vitro* and *in vivo*. While, for instance, pork is the most highly nutritious of all meats, the muscle fibers are so completely enveloped in fat that a great part of it passes through the body without having been acted on by the digestive fluids. Another instance is whole wheat bread, which shows a highly proteid content, more so than the ordinary white bread, but experience shows that it is less nutritive, the material of food value being so closely invested with cellulose as to materially hinder its being acted on by the digestive fluids. Another common error which he notices is confusion of nutritious and nitrogenous foods. While the nitrogenous are indispensable, it does not follow that the non-nitrogenous foods are not also essential. For example, when the nitrogenous portion of milk is separated it is not necessarily of the same value as when contained in the milk itself. The various widely-advertised farinaceous foods, he thinks, are more harmful to the child than altered milk. The child's alimentary canal is not capable of grappling with starch and still less with cellulose. Another class of foods in regard to which the chemist can enlighten the physician is that of meat extracts, which are simply stimulants rather than nutritive in their effect. The amount of nutritive content in the small quantity given is by no means comparable to that obtained in the unaltered article. The best way to get the benefit of a steak is to eat it. The class of food products whose claim for recognition is based on their contents of the results of proteolysis, and which are presented in the form of albumoses and peptones, are of real nutritive value in proportion to the amount of albumose and peptone that they contain, and may be of use where the digestive system is at fault. Often, however, a reasonable and legitimate idea is reduced to an absurdity by ignorance, such, for instance, as "peptonized beef tea." Beef tea contains nothing capable of peptonization. Chemists, he says, can combine with medical men in enlightening the public as to the real value of foodstuffs and as to the real meaning of nutrition.

12. **Hepatic Drainage in Biliary Infection.**—Deaver discusses the condition of biliary infection, and insists that infection of the liver and its ducts can be cured by surgical means. It is nearly always accompanied with gallstone formation, and likely to become perilous from common duct obstruction. Most patients, he thinks, who suffer from cholemia really die from infection, and not from the bile retention itself. Such a patient can be saved by drainage. He offers the following conclusions as justified in the light of present experience:

1. Suppurative cholangeitis should be operated on before the infection injures the liver cells and before the retained bile has a chance to react injuriously on the general organism. The presence or absence of gallstones is of no moment in deciding for early operation, though they are usually present.
2. Cholecystostomy is the operation of choice where the lesion is acute and the gall bladder has been functionating up to the time of infection.
3. Excision of the gall bladder can safely be performed in chronic calculous cholecystitis with an obstructed cystic duct.
4. Hepatic drainage must be provided for in all cases where infection is present or suspected: either through the gall bladder or by opening the common duct or the hepatic duct.
5. Abscess of the liver is prevented and pancreatitis relieved by prompt drainage of infected bile ducts.

13. **Sterile Water Anesthesia in Rectal Diseases.**—Gant has had good effects with sterile water injections for the production of local anesthesia in operations about the rectum. The temperature of the water is unimportant, though warm is preferable as being less uncomfortable. Sterile saline solution has been recommended, but has no special advantages. The injection is made into the skin and under it, so as to produce local distension before incisions are made. If the process has been properly carried out, the skin and underlying tissue can be incised without pain in almost every instance. He recommends it for eternal cutaneous hemorrhoids and for large internal venous or capillary hemorrhoids which can be anesthetized in thirty seconds by injecting directly into the center of the large tumor sterile water enough to distend it tightly and cause it to turn white. Fissures, fistulas, ulcers, epitheliomas, strictures, etc., can be operated on under water anesthesia. A small ischiorectal abscess may be treated in the same way, but large ischiorectal abscesses, those requiring extensive cutting and curetting, had better be operated on under other methods. Prolapsus ani of a moderate degree can be almost painlessly operated on by first distending with sterile water the area of the mucous membrane and muscle structures which are to be removed, or by distending the line of incisions when a segment of the bowel is to be excised. He points out the following advantages of water anesthesia:

1. Effective local anesthesia is so quickly and easily obtained by this method, that in a majority of rectal cases there is no necessity of requiring a patient to submit to the annoyance and expense of entering a hospital and undergoing general anesthesia. For this reason it appeals strongly to the better class of patients.
2. The anesthesia instantly follows the injection of water sufficient to distend tightly the tissues to be incised or removed. This enables the operator to work quickly and, as the patient is not confined to the hospital during the after treatment, but can come to the office to be dressed, it economizes the surgeon's time and labor.
3. No annoying or dangerous complications have been observed during or following the injection of the amount of water necessary to produce anesthesia.
4. In the writer's experience the pain and bleeding following this method of local anesthetization have been less than when medicinal local anesthetics have been used.
5. It eliminates the danger to life from heart, lung and kidney complications, which are always to be feared during and following the administration of ether or chloroform, and it avoids the increased pain and hemorrhage due to straining and vomiting after general anesthesia.
6. The only requirements are a hypodermic syringe, a suitable needle and boiled water, and these are usually at hand.
7. The radical treatment of hemorrhoids can be so easily carried out under this method in the physician's office, with so little danger and inconvenience to the patient, that it should relegate to oblivion the much vaunted injection treatment, which is so dangerous and uncertain.

This method is not practicable for excision of the coccyx or extensive operations, such as are required for the removal of large tumors. The after-pain is much less than when drugs are used, since they seem to excite a state of nervous excitability and produce local irritability after the anesthetic effects have been thrown off. While the method can not be employed in all major operations, he has employed it to the exclusion of general and local medicinal anesthetics in nearly all his rectal operations, hemorrhoids, fistulas, fissures, etc., with such satisfactory results that he heartily recommends it to others.

14. **Puerperal Sepsis.**—Pryor holds that the vulva and cavum uteri contain occasional streptococci, and that these streptococci, under favorable conditions, set up virulent septic fever. Moreover, he holds that these do not stay long confined to the original locality, but penetrate the peritoneal cavity, and pelvic lymphangeitis and phlebitis are early complications. In slight cases he washes out the uterus with Thiersch's solution, then with boric acid, and packs it full with a 10 or even 20 per cent. iodoform gauze, which can be done without narcosis, producing but little pain. If the affection is superficial the amelioration of symptoms is sudden, and nothing more is needed than to remove and renew the uterine packing in three days. The second dressing is removed in two more days and is not renewed. This method is a safe one in all the milder forms of puerperal fever, whether due to cocci acting as saprophytes or to saprophytic bacilli, but if applied in the purely sapremic types, a digital exploration of the uterine cavity should be made to discover and remove fragments of placenta or membranes which so frequently are present. If this method does not succeed in six hours in controlling a case of streptococcic endometritis,

he feels sure that the germs have penetrated deeply and that we have to deal with a case of not bacteriotoxic endometritis, but of true septic endometritis or puerperal sepsis. In the latter case he would operate by incision of the posterior cul-de-sac and thorough packing around the uterus with iodized gauze, 5 per cent., so that it completely fills the pelvis from side to side and is in apposition with the posterior layers of the broad ligaments and uterus, and in contact with all that portion of the pelvic peritoneum which overlies those lymphatics and veins that carry infection. The gauze should not project from the vulva. A self-retaining catheter is inserted and cardiac stimulants employed, but, he thinks, very large doses of strychnia have a tendency to contract the arterioles, which is undesirable in streptococcic infection. The first local effect is the enormous outpouring of serum from the peritoneum; the catheter is opened every three hours, the urine measured and tested for iodin, as well as otherwise. To keep up the function of the kidneys, he gives saline enemata in eight-ounce quantities every four hours. He has never noticed iodin eruptions, but in three instances those operated on showed mild systemic effects which soon passed off. Almost immediately after the operation the temperature drops. In eight instances, and only when infusion was employed, has he noticed violent chill and great acceleration in pulse rate as the patient comes out from under ether. This is met by vigorous stimulation with brandy per rectum and nitroglycerin hypodermically. A liquid diet is allowed in twenty-four hours. Endocarditis and pneumonia are treated medicinally. In three days the uterine packing is removed, and is not renewed unless the cavum uteri is large. The cul-de-sac dressing is removed in one week and renewed. All the dressings are saved and examined bacteriologically. If a purge is employed, it should not be by calomel, but by salines, as mercury with iodin may produce poisoning. He finds the colon bacillus still present in all the dressings. It seems to be necessary only to damage the peritoneum-covered tissues very slightly to secure its presence, but he thinks it is devoid of virulence, unless associated with cocci or in the presence of greatly-damaged tissues. The idea is to kill the streptococci, and he has begun a series of observations to determine the effects of iodin on the blood, but has thus far failed to isolate it from the serum. Streptococcal infection diminishes the hemoglobin and intravenous infusion still further lowers it. In only two cases where he has tested the blood along these lines has he found the hemoglobin increased. Pryor has never been able to separate his cases into post-partum and postabortive. In his 37 operations, 36 revealed the streptococcus in the uterine scrapings. In all 37 it was secured from the cul-de-sac. In 10 cases previous curetting had been done by others, and 3 patients died. In 43 cases not previously operated on, 1 died, making a mortality of only 2 per cent. These deaths were due to bilateral pneumonia in 1 and endocarditis with pneumonia in the other 3. Six of the patients have subsequently conceived, 5 going to full term; 1 aborting at the fifth month. He compares this method of treatment with those of curetting, antistreptococcus serum, hysterectomy and the let-alone treatment, and says he has nothing to apologize for. All the women he has operated on have been spared mutilation; in 6 with full restoration of physiologic function. In no case has death resulted directly from the operation. The results, he thinks, can be accounted for in no other way than by the action of iodin.

15. **Food Preservatives.**—Eccles argues in favor of food preservatives.

16. **Tuberculosis.**—In the continuation of his article Maher first discusses the identity of the *X* bacillus according to Conn, who considers it a form closely related to the *Bacillus mycoides*. He shows how it seems to overcome in cultures the pathogenic bacilli, and gives the results of some experiments in which cultures were taken from the blood of patients before the injection of the *X* cultures and after. In the former case there was an abundant growth of staphylococci and in one case of diplococci. Following the injections, plates made under the same conditions showed scattered colon or staphylococci and the permanent growth of the *X*, which soon overwhelmed the others. In the second set of plates, made three and five days after the injection, the growth of the *X* obscured all other growths. In the third set of plates, made on the seventh day after the *X* culture injection, the growth was similar to that of the first set after the *X*.

Medical Record, New York.
January 23.

17 *On Cytodiagnosis in Nervous Diseases. Charles L. Dana. With a Description of the Technic of Cell-diagnosis. F. W. Hastings.
18 *Lymphocytosis of the Cerebrospinal Fluid. Joseph Fraenkel.
19 *Thorium: A Radioactive Substance with Therapeutic Possibilities. Samuel G. Tracy.
20 A New and Simple Phototherapeutic Lamp. Henry G. Piffard.
21 *Early Operations in Abdominal Troubles. Edmund M. Pond.
22 Two Cases of Abdominal Traumatism. A. B. Atherton.
23 Common Duct Stone Without Characteristic Symptoms. George E. Brewer.

17. **Cytodiagnosis in Nervous Diseases.**—Dana points out the value of lumbar puncture for the examination of the cell count in various cases. He has operated on 22 cases, including a number with paresis and several types of insanity, together with meningitis, tumors, etc. Marked lymphocytosis seemed to be the rule in paresis, though in two of his cases no cells were found. In the alcoholic psychoses there were either no cells found or only three to six in one hundred fields. In a case of cerebellar tumor and one of hydrocephalus there were no cells, and in a case of contusion of the brain the prognosis was considered serious on clinical grounds and confirmed by cell count. He thinks the method will be of use in diagnosticating the doubtful cases of paresis and tabes in the early stage, and also in determining whether or not the patient has had syphilis and whether certain symptoms indicating invasion of the central nervous system by this infection are correct. It will also hold good in diagnoseing the activity of the process. If there is an actual inflammatory change going on it will be shown by the presence of polynuclear leucocytes, while in the ordinary conditions of specific infection, only mononuclears are present with a proportion of not over 5 per cent. of polynuclears. He has had no serious trouble from this method, though the operation is somewhat disagreeable as regards subsequent headache and vertigo. It seems in some cases that the headache is reflex or psychic.

The technic of the method is described in detail by Dr. Hastings.

18. **Lymphocytosis of the Cerebrospinal Fluid.**—This article is in a measure supplementary to Dana's, and the findings are practically the same.

19. **Radioactive Treatment with Thorium.**—Tracy illustrates the radio-activity of thorium and calls attention to its antifermentative property. He suggests two methods of using radio-activity in tuberculosis. One is by using a saturated solution of nitrate of thorium in a large shallow receptacle. A slight current of air can be caused to pass over the solution from a compressed air tank, while the patient is inhaling. With the nitrate of thorium there may be more or less free nitric acid; this must be neutralized by passing the emanations, before inhalation, through a wash-bottle containing a saturated solution of sodium bicarbonate. The more satisfactory way, he thinks, is by heating the oxid of thorium by the Lieber apparatus, which is illustrated. The procedure leaves in the lung cells a fine film of radio-active matter which in turn produces the phenomenon of induced radio-activity in the same parts, which may last for one or two days. This is shown by the patient, after inhaling thorium emanations, exhaling on a photographic plate, which produces the ordinary effects on the silver salts. An inhalation given every day or every other day, he says, will keep the lung cells constantly in a radio-active and antiseptic condition. The heat emanating from a Lieber apparatus can be cooled by passing through a glass and rubber tubing, and the inhalation may be given for a period of fifteen minutes at the outset, gradually increasing to half an hour. This method of treating tuberculosis will not interfere with other medical, dietetic or other treatment.

21. **Abdominal Operations.**—The importance of early operation in abdominal troubles is pointed out by Pond. He would fix no stated time. In one case, perhaps, twelve hours is late; in another three days is early. Among those demanding earliest interference are irritations of the stomach, intestines and gall bladder. Another misdirected idea is that of interval operation for appendicitis. Of course, the mortality of operations in the interval is very small, but when to this is added those that die during the attack not operated on, it becomes much larger. It is not always possible to diagnose cases positively at once, but by grouping of the symptoms and exclusion, we can decide whether it is safe to wait or operate at once. In conclusion, he says if you wish to do right by your patients, operate early; if you wish to be conservative and have a small death rate, operate early, and if you wish to get a medical reputation and help the cause along, do the same.

Medical News, New York.
January 23.

24 Interscapulothoracic Amputation for Sarcoma. Charles A. Powers.
25 *Prevention of the Spread of Ringworm. F. H. Beadles.
26 *Cryoscopy of Urine, the Method of Claude and Balthazard. F. Burthe.
27 *The Pathology and Treatment of Osteoarthritis. Edward M. Merrins.
28 *Bovine Tuberculosis. J. W. Kime.
29 Neurasthenia. Joseph N. Study.

25. **Ringworm.**—The danger of the transmission of ringworm from one patient to another and also through domestic animals is remarked on by Beadles. He urges the necessity of school inspection and the comparative isolation of the sufferers, not allowing them to use the same towels, combs or brushes with others, and frequently sterilizing those that are used. The number of domestic pets, especially those that are mangy or diseased, should be diminished.

26. **Cryoscopy.**—Burthe's article on Claude and Balthazard's method does not permit of abstracting in detail, and should be referred to directly.

27. **Osteoarthritis.**—Merrins sums up the etiology of the disease, as whenever the tissues or joints suffer from some low form of chronic inflammation from some disease or injury, or are kept continuously irritated from overstrain or foreign bodies, or nutrition is impaired by some glandular disturbance, osteoarthritis may occur. He would not say that it is altogether a disease of toxic origin, but remarks that it is in those diseases in which toxins are formed abundantly that we may expect to find osteoarthritis, and do most frequently. He does not consider it a primary, but rather a secondary affection of these conditions. The medical treatment is that appropriate for the primary condition. The alkalies are prescribed, and do good by preventing intestinal fermentation, but it is doubtful if they combine with the uric acid in the human body as in the chemical laboratory. If they do, they are useful only where the gouty diathesis exists. The salicylates may be given in rheumatic cases for the relief of pain. Except the specific treatment in syphilitic cases, no drug he is aware of is capable of reducing the enlarged bones, but much can be done to check their growth, especially where the internal glandular secretions are defective, by giving preparations of the gland which is at fault. The antidiabetic régime has been found advantageous by Bezley Thorne, and change of climate is often beneficial, and treatment at thermal springs health resorts may improve the general condition. For local treatment, after acute inflammation has subsided, he would give baths of superheated dry air, followed by gentle passive movements and massage, gradually increasing the range of motion, but never causing severe pain or inflammation. In the early stages rest and alleviation of pain are necessary. In advanced cases forcible manipulation of the joint under anesthesia has occasionally effected temporary improvement, but is hardly advisable.

28. **Bovine Tuberculosis.**—Kime insists on the dangers of infected milk and the need of elimination of tuberculous animals from the dairy herds. He thinks the unfortunate utterances of Koch have materially lengthened the time necessary to stamp out bovine tuberculosis.

St. Louis Medical Review.
January 23.

30 *Preparation of Patient for Abdominal Section and Treatment of the Case. Walter B. Dorsett.

30. **Abdominal Operations.**—The preparation of the patient for an abdominal operation is described by Dorsett. He believes in the simpler methods, avoiding irritant chemicals around the field of operation, but using good, clean soap and hot water and a razor to scrape off any excretions that are brought to the surface. This may be all that is necessary until the patient is brought to the table, the part being protected by a thick layer of sterile gauze or absorbent cotton left in place until the patient is anesthetized and brought to the operating room. This is then removed, and the site of operation again scrubbed or wiped off with a solution of green soap, rinsed off with sterile water, after which sulphuric ether is applied, and when it has disappeared by evaporation, alcohol is used. Sterile towels are applied around the proposed incision, care being taken not to leave too great a portion uncovered. During the operation the surgeon should avoid touching the skin of the patient unnecessarily, and at no time, if the intestines be brought through, should they be allowed to rest on the skin, but only on sterile towels, which should be changed as soon as soiled. He thinks, in our zeal to get the intestinal tract free of fecal matter, we overdo catharsis and weaken the patient. His favorite formula for all celiotomies is: Magnesium sulphate, 3 drams; sol. magnesium citrate, 12 ounces; solution carmin, 15 minims. Sig.: One-third contents of bottle every three or four hours till bowels act. On the morning of the operation a copious soapsuds enema is given to remove the remaining fecal matter, so that in case a saline enema be required later a better absorbing surface in the colon is provided. For the prevention of emesis he has lately established the plan of allowing the patient to drink thirty to forty ounces of water in quantities of ten ounces at intervals of half an hour, prior to going to the operating room. The stomach is then filled with water, and when the chloroform or ether enters it dissolves in the water and is held in solution, avoiding irritation of the gastric walls. The last drink of ten ounces is given immediately before the anesthesia. He has noticed that in most instances this last portion is vomited with but little effort and the nausea ceases. This practice has greatly lessened his anxiety in many cases. For dressing the incision he is in the habit of folding pads of gauze so as to make them hard, applying them on each side of and over the line of incision, maintaining them in contact with the abdominal wall by a larger piece of gauze sealed down with collodion. This firm dressing, when the binder is drawn snugly, acts as a buffer or in the same manner as does a pad or truss. The collodion also prevents the dressing from slipping off during convalescence or when the patient turns. It is not removed until the tenth day after the operation, when the pads are removed. For gaseous distension he uses the Virgil O. Hardin treatment, viz., enemata of alum solution, half an ounce of pulverized alum to one pint of warm water, carried well up into the colon, best introduced with the patient in the Sims posture. The peristalsis of the colon thus induced draws the gas through the ileocecal opening, and it is expelled. He prefers this to any attempt to open the bowels with laxatives the day after the operation.

Cincinnati Lancet-Clinic.
January 23.

31 The Eye, Ear, Nose and Throat Complications in Acute Infectious Diseases. Derrick T. Vail.
32 Comparison of Measures for Rescue of Mother and Child in Placenta Previa. Walter Schell.
33 The Medical Society and Medical Progress. B. H. Blair.

Chicago Medical Recorder.
January 15.

34 *Home Treatment of Suppurative Ear Diseases. Joseph C. Beck.
35 *The Treatment of Urethritis in the Acute, Subacute and Chronic Forms. George Rubin.
36 Tuberculosis and Life Insurance. Thomas G. Allen.
37 Medical Examinations for Life Insurance in Large Cities. L. Brackett Bishop.
38 *The Technic of Blood Examinations. Ross C. Whitman.

39 Tuberculous Disease of the Bone. John Ridlon.
40 Some Observations of Practical Interest on Colonic Lavage. Milton H. Mack.

34. **Suppurative Ear Diseases.**—Beck describes the method of treating suppurative ear disease by means of a specially adapted probe and tube containing gauze. The tube has a little beak at the tip which acts as a retractor for the tragus and also aids the probe in getting hold of the gauze. His conclusions are given as follows:

1. That most individuals afflicted with suppurative ear diseases belong to the poorer (clinically treated) cases. 2. That two or three times a week treatment by the physician is not satisfactory, especially in acute cases. 3. That the constant moisture in the middle ear and external ear leads to granulation formation, decomposition and necrosis. 4. That by means of intelligently instructing patients the treatment of suppurative ears can be markedly improved on and better results obtained. 5. Patients and their immediate friends are easily instructed. 6. That by means of this specially contrived tube, gauze and probe the patient may be safely intrusted with the treatment, since infection and injury are not liable to follow. 7. Without the aid of a head mirror, ear speculum, etc., one can pack the ear very easily in that way, and it makes a very convenient appliance also in office practice.

35. **Urethritis.**—Rubin uses a weak permanganate of potash solution for irrigation, starting with 1 in 10,000 or 1 in 15,000, gradually bringing it up to 1 in 5,000 in the third or fourth week. He uses the ordinary fountain syringe and a glass bulb, olive-shaped, the same as used for the nasal douche. He prefers a single current, and treats the acute case once a day. During the first two weeks the anterior urethra alone is irrigated, but later the posterior urethra and bladder are also flooded. With the irrigation treatment he also has the patient use 5 per cent. argyrol solution as an adjunct, and also prescribes sandalwood oil, 5 minims, with salol and sodium bicarbonate to be taken 3 gr. each one or two hours after meals. These remedies are only necessary in the acute or subacute form when the urine is highly acid. He allows the patient to drink plenty of pure water, discontinuing, of course, all carbonated waters and alcohol. In chronic cases the sound plays an important part in addition to the irrigation treatment, but the irrigation precedes all the instrumental work. He calls attention to the value of cocain solution, 2 to 5 per cent., used before introducing the sound in very sensitive urethras. His cases were cured in three to six months, three treatments a week being sufficient for the chronic cases. He has no good word to say for the instillation method.

38. **Blood Examinations.**—Whitman's article is a clear account of the method of examining the blood and the use of various reagents. He thinks, however, that the physician should read some special work on the subject. While the technic may look a little intricate to the beginner, two or three hours' practice will go far to solve its difficulties. The examination does not take any length of time.

The Laryngoscope, St. Louis.
December.

41 The Removal of Obstructions and Cicatricial Contractions of the Nose by the Plastic Method. John O. Roe.
42 *The Present Status of the Treatment of Mastoiditis. Geo. F. Keiper.
43 *Chronic Tonsillitis. Gilbert D. Murray.
44 The Present Status of the Dunbar Hay Fever Therapy. F. W. Bailey.

42. **Mastoiditis.**—Keiper has sought the opinions of various authorities as to the use of heat or cold and the methods of application in mastoiditis, and gives the results of his replies. The author himself favors the use of hot applications, and that seems to be the opinion of the majority, at least for continued applications.

43. **Tonsillitis.**—Emphasis is laid by Murray on the following points:

1. The teeth should receive attention from infancy. The tongue when coated should be cleansed as carefully as the teeth. 2. The mouth is a primary cause of tonsillitis and ought to receive simultaneous treatment with the throat. 3. Offensive breath, from micro-organisms present in the mouth and throat, can be eliminated through the personal effort of the patient. 4. Bad taste in the mouth, particularly before meals, suggests infection of the tonsils, decomposing epithelium debris on the tongue, gums, teeth and oropharynx—one or all. This filth (in which Sternberg found 42 different varieties of micro-organisms) ought to be cleaned and sterilized several times daily by the patient. 5. Diseased tonsils, not necessarily enlarged and often hidden, no longer act as a barrier to disease, but rather as a germ incubator and ought to be removed. 6. No method of removing the tonsil is a safeguard against dangerous hemorrhage when one operates on a bleeder.

Albany Medical Annals.
January.

45 The Medical Annals: Autobiographical. Frederick C. Curtis and Willis G. Tucker.
46 Four Cases of Gangrene. Albert Vander Veer and Edgar A. Vander Veer.
47 Lipoma of the Intestine. Samuel B. Ward.
48 *Myasthenia Gravis. Henry Hun. With Report of the Autopsy by George Blumer, Together with a Report of the Microscopic Examination of the Tissues. George L. Streeter.
49 *Acute Ascending Paralysis of the Type of Landry. With the Report of Two Cases, One with Autopsy, the Other with Complete Recovery. Hermon C. Gordinier.
50 *A Consideration of the Efficacy of Antitoxin in the Treatment of Diphtheria. Joseph D. Craig.
51 Nervous Dyspepsia. Andrew MacFarlane.
52 *The Islands of Langerhans in Congenital Syphilitic Pancreatitis. Richard M. Pearce.
53 *A Study of the Changes Occurring in the Endometrium During the Menstrual Cycle. H. Judson Lipes.
54 *The Pathology and Treatment of Tetanus. With Report of Three Cases. Arthur W. Elting.
55 A Plea for the Rational Administration of Chloroform as a Routine Measure in Labor. Spencer L. Dawes.
56 *The Etiology and Diagnosis of Osena and Its Relation to Pulmonary Tuberculosis. A Preliminary Report. Clement P. Theleen.
57 *Starch Digestion in Infancy. Henry L. K. Shaw.
58 The Etiology of the Summer Diarrhœa of Children and of Dysentery of Bacterial Origin. Herbert D. Pease and Henry L. K. Shaw.
59 Cysts of the Mesentery. Alvah H. Traver.

48. **Myasthenia Gravis.**—Hun's patient was a man 32 years of age, the disorder commencing insidiously, first showing itself in ptosis, with the slow development of the typical clinical picture of the disease, which is remarkably uniform in its manifestations. The postmortem revealed a sarcoma of the anterior mediastinum, possibly originating in the thymus, but no lesions in any part of the nervous system. In the presence of sarcoma the case was similar to one of Weigert and also one of Link in which the thymus was persistent. In Oppenheim's case of doubtful diagnosis, but closely resembling myasthenia gravis, there was also sarcoma in the anterior mediastinum. The authors, however, do not attribute the condition to this anomaly. They conclude that so far as can be estimated from the present data, the best theory of the pathology is that of interference with the lymph circulation. The only lesion that has yet been found which has been confirmed by a number of observers is infiltration of the muscles with lymphoid cells. Whether this is primarily due to irritation of a toxin or some other cause, or whether it is secondary to primary change in the lymphatic circulation, is uncertain, but Hun inclines to the former. The prognosis of the condition is necessarily bad, and the treatment, as the authors say, is a matter of the future. The article concludes with a full bibliography.

49. **Landry's Paralysis.**—Gordinier reports two cases, one with recovery.

50. **Diphtheria Antitoxin.**—Craig's report is based on a study of 1,182 cases. His conclusions are given as follows:

1. The use of antitoxin is increasing and is generally accepted as a valuable therapeutic agent by the medical profession. 2. The medical profession is using mature judgment in the selection of cases for the use of antitoxin, the milder cases being permitted to to go on to recovery without the use of antitoxin, and the more severe cases, including the mixed infections, are given the benefit of protective inoculation. 3. The use of antitoxin has decidedly diminished the death rate and has saved many lives.

52. This article appeared elsewhere. See THE JOURNAL of Jan. 9, §33, p. 127.

53. **Menstruation.**—The changes in the endometrium in menstruation are summed up by Lipes in substance as follows: The menstrual cycle is divided into three periods, one preceding the flow, characterized by a gradually developing congestion resulting in serous or serosanguineous infiltration of the stroma of the mucosa, separating the cellular elements and gravitating toward the periphery, forming collections of blood beneath the surface epithelium. Slight glandular hypertrophy, as well as swelling of the gland cells and consequent hypertrophy of the whole mucosa, likewise occur. The second stage of active hemorrhage is characterized by the outflow of blood through a diapedesis or through a rupture of the subepithelial hematoma with more or less loss of superficial epithelium depending largely on the severity of the

process. In the third stage involution takes place. The engorgement lessens, and rapid absorption of the blood in the stroma takes place. The epithelium which has been lost is regenerated by indirect cell division of the adjacent cells. This stage is prolonged until the premenstrual swelling takes place again, or else there is a slight interval during which the mucosa is inactive.

54. **Tetanus.**—Elting reports three cases and reviews the pathology and treatment. He concludes that the transmission of the toxin is along the axons of the peripheral nerves and not along the perineural and endoneural lymphoid spaces, and that it has a special affinity for the anterior horn cells and their analogues, the motor nuclei of the medulla and pons, as well as the peripheral and central axons. The sensory impulses play an important part in the production of this tetanus spasm. The action of tetanus toxin on the nerve cell is, perhaps, best explained by Ehrlich's theory, according to which the protoplasm of the nerve cell possesses certain so-called side chains which are able to attract and attach themselves to tetanus toxins in the blood. He favors the antitoxin treatment, and in this the subcutaneous method will be most generally applicable, but should be supplemented in severe cases by subdural injections. The Baccelli method of use of carbolic acid, he thinks, perhaps, is of value as a symptomatic treatment in conjunction with antitoxin.

56. **Ozena and Tuberculosis.**—Theisen has studied the connection of ozena with tuberculosis, observing altogether 21 cases, in 8 of which pulmonary tuberculosis occurred. He thinks it is more than a coincidence that this complication should be so frequent. When we consider how ozena affects the normal functions of the nose, we can readily understand how the tendency to tuberculosis can be established.

57. **Starch Digestion in Infancy.**—From a series of tests made on babies in a hospital Shaw concludes that:

> The saliva of very young infants contains a diastatic enzyme capable of converting small amounts of starch into maltose. This diastatic action of the saliva may continue in the stomach as long as two hours after feeding. Therefore, on physiological grounds, there is no reason why young infants can not digest small amounts of starch.

Medical Standard, Chicago.

January.

60 *Plastic Operations on the Sphincter Ani Muscle for Incontinence of Feces. J. Rawson Pennington.
61 A Surgical Clinic (Blastomycosis, Synovitis of Ankle Joint, etc.). N. Senn.
62 The Pathologic Pupil: Its Significance. Willis O. Nance.
63 Fistula of the Rectum. Charles J. Drueck.
64 Some Factors in the Causation of Drug Habit. Burton R. Corbus.
65 The Value and Limitation of Crounotherapy (mineral waters). George T. Palmer.

60. **Rectal Incontinence.**—Pennington operates by making a semicircular incision at one side of the anus, cutting the sphincter muscle and freshening the edges or ends of the torn sphincter by taking a V-shaped piece out of the angle and suturing the parts together. Then the flap is replaced and sutured and an aseptic dressing and T bandage applied. He thinks Chetwood's operation (see THE JOURNAL of April 19, 1902, vol. xxxviii, ¶30, p. 1037), is also a valuable one, and describes it. The article has 6 illustrations.

Archives of Otology, New Rochelle, N. Y.

December.

66 A Case of Thrombophlebitis of the Cavernous Sinus, Complicating an Empyema of the Sphenoidal Sinuses and Ethmoidal Cells, Mistaken for a Thrombophlebitis of the Lateral Sinus. C. E. Finley.
67 *Clinical Experiences with the Enlarged Pharyngeal Tonsil. H. Gradle.
68 On the Pathology and Treatment of Chronic Purulent Otitis. I. Indications for Removal of the Hammer and Anvil. II. Relative Frequency and Localisation of Disease of the Ossicles. Dr. Buckstorf.
69 *On the Causation and Prevention of Bone Necrosis in the Course of Chronic Purulent Otitis. A. Scheibe.
70 *Manifestation of Traumatic Hysteria in the Organ of Hearing. Ernest Barth.
71 *On a New Symptom of Hemoglobinuria; Cyanosis and Gangrene of the External Ear. F. Rohrer.

67.—This article has appeared elsewhere. See THE JOURNAL of Jan. 9, ¶19. p. 125.

69. **Bone Necrosis in Chronic Purulent Otitis.**—Scheibe finds that necrosis in chronic non-specific middle-ear suppurations is exclusively of local nature. The suppuration acts in a necrotic manner only when pus is retained and putrefies. This condition generally occurs only when the middle-ear suppuration is complicated by cholesteatoma, although other causes are possible. In one patient the bone necrosis followed the use of carbolic acid. It is striking how rarely chronic suppuration without cholesteatoma causes necrosis. The prophylaxis, therefore, is connected with the treatment of the cholesteatoma; if it is possible to prevent putrefaction of pus, the onset of necrosis can be prevented. This is usually accomplished by antiseptic treatment with the tympanic canula as devised by Hartmann and Bezold. In exceptional cases, where continued treatment does not succeed in correcting the fetor, operation is indicated. He has not, however, observed a single case of cholesteatoma where necrosis occurred during treatment.

70. **Traumatic Hysterical Deafness.**—Barth reports two cases in which, with complete bilateral deafness of hysterical origin, the unconscious perception of musical sounds was not impaired. In the first case the condition was only temporary. In the second case with a traumatic cause in a rather neurotic individual, the deafness persisted and color blindness also appeared; the progressive course of the disease made the prognosis unfavorable.

71. **Hemoglobinuria.**—Rohrer reports a case where, with hemoglobinuria there was a bluish black discoloration of the auricles and superficial gangrene which, however, passed away without leaving a serious scar. The urine contained albumin and blood pigments. He has not observed this symptom in otologic literature, but found a case published by Wilkes in 1879, in which a similar symptom was associated with abscess of the hip-joint after injury. The fingers in this case, the toes and the tip of the nose also participated. (This is reported here as a case of hemoglobinuria, though in the brief abstract given, this symptom is not mentioned). These observations, Rohrer remarks, show that, with the appearance of lividity and cyanosis, hemoglobinuria should be suspected and an analysis of the urine be made.

Southern Practitioner, Nashville, Tenn.

January.

72 *Do We Place Too High a Value on the Presence or Absence of Murmurs in Cardiac Disease? E. G. Wood.
73 *Fractures of the Skull. Paul F. Eve.
74 The Finsen Light Cure. H. John Stewart.

72. **Cardiac Murmurs.**—The diagnostic value of murmurs is over-estimated in Wood's opinion. He does not think that murmur in the cardiac area is conclusive evidence of heart disease. It may be hemic or exocardial in origin, and even when endocardial, it is doubtful whether it gives any information as to the condition of the cardiac muscle or the extent of the valvular lesion. In most cases changes in the size of the heart, character and relative intensity of the cardiac sounds and the condition of the pulmonary or peripheral circulation are the most important factors in the case. The absence of cardiac murmurs is of very slight value in excluding cardiac disease, as they may be absent in grave disorders for a long period. In prognosis they are also of very little value. We can rely more on the general appearance of the patient and the same indications as in diagnosis.

73. **Fractures of the Skull.**—Two cases are reported by Eve, who thinks that in all cases of injury of the cranial vault or where there is any suspicion of fracture, it is the duty of every surgeon to cut down and investigate. If there should be a small external wound it should be enlarged. If there is a fracture, whether linear or otherwise, trephining should be performed as soon as possible on account of the danger from sepsis. He believes in thorough irrigation with normal saline solution, continuing it from ten to twenty minutes, and where any spicule of bone are carried into the brain, this irrigation should be carried to the very bottom of the wound. There should also be drainage by either catgut, gauze or tube, but it can be dispensed with if no pus is found at the end of the third day. The hemorrhage can be arrested by hot normal saline solution

(120 F.) or gauze pack. In fractures of the base of the skull he thinks sepsis can be prevented by thorough irrigation with warm normal saline solution, 115 to 120 degrees, either in the nasal cavity or ear, as these are the points where the bacteria usually gain access. It has been his plan for years to irrigate these cavities as far as possible and continue it from ten to twenty minutes. Strychnin should be administered for combating shock and the bromids to rest the brain, preferably the bromid of ammonium. He lays stress on the position of the patient, having those with fracture of the anterior fossæ lie on the abdomen, while those with fracture of the middle or posterior fossæ lie on the ear from which the bleeding occurs. The irrigation in these cases should be done every two or three hours, as gently as possible.

Journal of Medical Research, Boston.
January.

75 *Scarlet Fever. Protozoon-like Bodies Found in Four Cases. F. B. Mallory.
76 *A Study of Actinomyces Cultivated from Commercial Vaccine Virus. William T. Howard, Jr.
77 The Shape of the Mammalian Red Blood Corpuscles. Frederic T. Lewis.

75.—See abstract in THE JOURNAL, Jan. 2, 1904, p. 52.

76. Actinomyces.—Howard describes here the forms observed by him in vaccine virus. Actinomyces have been found in bovine vaccine virus by three sets of workers, Sabrazes and Jolly, Folli, and himself. His summary is as follows:

The vaccine virus of five vaccine establishments in the United States examined by me during the period from October, 1902, to May, 1903, contained actinomyces—twenty-four times in a total of ninety-five cultures. In the course of this investigation nine different species of actinomyces, six of which are apparently new, were found. These organisms probably reach the virus from the air, water, soil, hay, straw and hide. While unsupported by bacteriologic investigations, or by experiments, it is not improbable that some of the postvaccinal suppurative infections are caused by these organisms, and are cases of atypical actinomycosis.

Texas Medical News, Austin.
December.

78 *The Treatment of Urethral Strictures. E. E. Guinn.
79 The Regular or Rational Physician. S. B. Kirkpatrick.
80 Puerperal Infection. J. M. McCutcheon.
81 Report of Two Cases of Tubo-ovarian Pregnancy. R. M. Dunn.

78. Urethral Stricture.—Guinn advocates the electrolytic treatment, using a battery of ten cells or more, an indifferent electrode pad and a series of olive-pointed bougies, of different sizes. He commences with the smaller size first, with a current of three to five milliampères for fifteen minutes, repeating the operation after ten days, using each time a larger electrode sound, always with the negative pole in the stricture. This softens and dissolves away the tissue, while the positive pole hardens and dries. The latter is attached to the indifferent pad electrode, placed at some indifferent point on the body.

Proceedings of the Philadelphia County Medical Society. Philadelphia.
December 31.

82 *Report of a Case of Hydrophobia with Autopsy. G. Morton Illman.
83 Practical Lessons from an Experience of More than One Hundred Cases of Eclampsia. Barton C. Hirst.
84 *Myxedema Complicated with Diabetes Mellitus Occurring in Two Children. Effect of Thyroid Extract on Both Diseases. Remarks on the Pathogenesis of Diabetes. Alfred Gordon.
85 The Value of Histologic Examinations in Carcinoma of the Uterus. Brooke M. Anspach.
86 *The Serum Treatment of Hay Fever. Lewis S. Somers.
87 Erysipelas and Atrophic Rhinitis. I. Valentine Levi.

82. Hydrophobia.—Illman reports a case carefully observed throughout its course, and followed by autopsy. He calls special attention to the lack of psychic manifestations. Inoculation experiments were positive in rabbits.

84. Myxedema and Diabetes.—The cases here reported were of brothers, aged respectively three, four and one-half years, and in each case there was a marked diabetes, not simply glycosuria. The occurrence in such early childhood is of note, as also the relationship of the patients as indicating a degenerative hereditary tendency. Both cases were favorably affected by thyroid medication. Its action on both the conditions was notable, and it was even earlier in its effect on the diabetes than on the myxedema. There was without question, he thinks, from this fact, a direct relationship between the diabetes and the thyroid gland. The fact, too, that the prognosis of diabetes in children has generally been unfavorable, while in these cases it was the reverse, is worth mentioning. He asks, does not the outcome in this case indicate that diabetes due to deficient thyroid function is far less grave a type than that caused directly by destruction or pathologic conditions of the islands of Langerhans?

86. Hay Fever.—Somers notices Dunbar's work on this subject and gives his own experience with the use of serum from animals inoculated with the pollen toxin of golden rod in ten cases. Admitting that the number is too small for positive conclusions, he suggests that the experience obtained with the golden-rod antitoxin indicates that:

1. The serum produces prompt and positive amelioration of the symptoms of fall hay fever in the majority of cases. 2. In a smaller number this favorable result is soon accompanied with the complete disappearance of the affection. 3. Where slight or no action is seen after its use, pollen as an etiologic factor does not predominate. 4. When results are obtained, it favorably influences all the manifestations of hay fever. 5. While I am unable to state from personal experience the effect of the serum on hay fever occurring at other times of the year, or its effects when administered in advance of the attack, yet when given during the attack, irrespective of its severity, it produces marked palliation rather than absolute cure. 6. Its effects on future attacks remain as yet unknown. 7. The serum in powder form is slightly soothing to the nasal mucosa, has but little influence on the other symptoms of the affection, and in occasional cases it may act as a direct irritant. Finally, as a result of larger experience, especially with hay fever occurring at other times of the year, it may become necessary to modify some of the opinions in regard to this antitoxin.

Atlanta Journal-Record of Medicine.
January.

88 *The Question of Nasal Treatment for the Cure of Diseases of the Ear. Alex. W. Stirling.
89 *Combined Anesthesia with Ethyl Chloride and Ether. William P. Nicholson.

88. Nasal Treatment of Ear Diseases.—The proposition advanced by Stirling is that it is of no use to employ intranasal treatment for the relief of deafness unless such treatment is also advisable for the sake of the nose itself. In a few cases, however, of slight adenoids around the orifice of the eustachian tube and associated with middle-ear catarrh, it would be advisable to remove them even if there were no symptoms referable to the nasopharynx.

89. Ethyl Chlorid and Ether.—Nicholson, advocates ethyl chlorid as a preliminary to ether anesthesia, using an ordinary Esmarch chloroform inhaler and spraying from an ordinary kelene tube. When the patient ceases to show pain from pinching the skin of the hand, the ether inhaler is applied and the patient passes rapidly into complete anesthesia in from three to five minutes. The advantages of this method are the lack of struggling, the absence of prolonged nausea of anesthesia, and the very small amount of ether consumed. He thinks the method is as free from danger as any anesthesia can be, is inexpensive, and lessens to a large degree the danger of complications. It requires no such cumbrous apparatus as the nitrous oxid ether anesthesia.

Medical Age, Detroit.
January 10.

90 Gastric Cancer. A. L. Benedict.
91 Acute Parenchymatous Nephritis. E. Luther Stevens.

Northwestern Lancet, Minneapolis.
January 1.

92 Surgery of the Prostate. J. Warren Little.
93 Supracondylar Osteotomy for Bow-legs. C. J. Ringnell.
94 Catarrh and Predisposition. B. M. Behrens.

January 15.

95 Fractures of the Lower Jaw. Arthur T. Mann.

Vermont Medical Monthly, Burlington.
November 25.

96 Prolapse of the Uterus. S. G. Start.
97 Acute (Diffuse) Nephritis. Deane Richmond.
98 An Easy Way to Reduce Dislocation of the Shoulder-joint Without Anesthesia. Henry Janes.

Brooklyn Medical Journal.
January.

99 Observations on Puerperal Septic Infection. Charles Jewett.
100 Contraindications to Maternal Feeding. William A. Northridge.
101 Some Results in Roentgen Diagnosis and Therapeutics. Charles Lester Leonard.
102 Some Pathologic Similarities Between Appendicitis and Cholecystitis. Walter C. Wood.

Detroit Medical Journal.

January.

103 The Prevention of Tuberculosis. William Tibbles.
104 The Milk Supply of Cities and Dangers from Its Contamination. Guy L. Kiefer.
105 Acute Gastritis. W. M. Harvey.

Bulletin of the Kentucky State Medical Association, Louisville.

January.

106 Pneumonia, Its Clinical Varieties, Anomalous Types and Treatment. J. Tom Price.
107 Porro-cesarean Section Necessitated by Malignant Disease of the Uterus. R. C. McChord.
108 Exostosis of Orbit, with Report of Case. D. C. Bowen.

Journal of Eye, Ear and Throat Diseases, Baltimore.

November-December.

109 A Large Dermoid Tumor of the Mastoid. Richard H. Johnston.

Medical Sentinel, Portland.

December.

110 Observations on the Climatology of the Arid Region. F. Cauthorne.
111 Report of Eight Cases of Appendicitis Treated Without Operation. F. S. Lewis.
112 Excision of the Cervical Sympathetic Ganglia for Glaucoma, Exophthalmic Goiter and Epilepsy. H. D. Niles.
113 Ununited Fractures, with Report of Five Cases. W. C. Coz.
114 Practical Therapeutics in Eye Diseases. Jno. A. Donovan.

Columbus Medical Journal.

January.

115 Carbolic Poisoning, with Report of Case. D. S. Hanson.
116 Glioma of the Retina. C. F. Clark.
117 Typhoid Gangrene of the Lower Extremities and Feet. B. Merrill Ricketts.
118 Diagnosis in the Right Half of the Abdomen. Byron Robinson.

Canadian Journal of Medicine and Surgery, Toronto.

January.

119 The Care and Treatment of the Criminal. C. K. Clarke.
120 The Open Method of Treating Fractures. F. N. G. Starr.
121 Personal Experience with Alexander's Operation for Retroversion of Uterus. H. Meek.

Canadian Practitioner and Review, Toronto.

January.

122 Hay Fever; Etiology and Specific Treatment. V. E. Henderson.
123 Otitis Media. G. H. Burnham.

Dominion Medical Monthly, Toronto.

January.

124 *Inter-relations of Diabetes and Other Constitutional States. George F. Butler.
125 *Prostatectomy and Galvano-caustic Prostatotomy (Bottini's Operation); Their Present Status in the Radical Treatment of Hypertrophied Prostate Gland. Willy Meyer.
126 *Practical Considerations on Intestinal Anastomosis. Theodore A. McGraw.
127 Impetigo Circinata. Graham Chambers.
128 Case Reports of Syphilis, with Remarks. James Ross.
129 The Treatment of Facial Deformities by the Subcutaneous Injection of Paraffin. George K. Grimmer.

124.—See abstract in THE JOURNAL, xli, ¶3, p. 1111.

125.—Ibid., xl, p. 1670.

126.—This article appeared elsewhere. See THE JOURNAL, xli, ¶122, p. 1371.

Virginia Medical Semi-Monthly, Richmond.

January 8.

130 Report of Two Tracheotomy Cases. Clarence P. Jones.
131 *Tubercular Osteitis of the Knee. A. R. Shands.
132 A Visit to Professor Kehr's Clinic in Halberstadt, Germany. I. S. Stone.
133 Some Notes on the Symptoms and Diagnosis of Cholelithiasis. Stuart McGuire.
134 The Constitutional Condition in Amputations. Thomas H. Manley.

131.—See abstract in THE JOURNAL of January 16, p. 190.

Medical Bulletin, Philadelphia.

January.

135 Arthritis Deformans. John V. Shoemaker.
136 A Clinical Lecture on the Treatment of Gonorrhea. H. M. Christian.
137 Rapid Tracheotomies. E. B. Gleason.

Medical Summary, Philadelphia.

January.

138 Dyspepsia. F. B. Brubaker.
139 Water and Its Relation to Health. J. L. Wolfe.
140 Practical Bedside Notes. C. W. Canan.
141 Rupture of Sublingual Gland. Alex. Rixs.
142 How to Avoid Prescribing Opium and Morphin. N. B. Shade.
143 Tonsillitis. Ira A. Marshall.
144 Gonorrhea. J. A. Burnett.
145 Avena Sativa. M. G. Price.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Presse Médicale, Paris.

1 (II, No. 102.) *History of a Tack and of a Prune Stone in the Bronchi. M. Lermoyez and J. Guisez.—Histoire d'un clou et d'un noyau de prune dans les bronches.
2 Cas de dysentérie amibienne. H. Vincent. Three cuts.
3 (No. 103.) *Le radiodiagnostique des corps étrangers des bronches. A. Béclère.
4 *De l'œsophagoscopie et de la trachéobronchoscopie directes. J. Guisez.
5 (No. 104.) *La tuberculose dans l'armée et dans les campagnes. E. de Lavarenne.
6 *Du diagnostique de la pyélite et de la pyélonéphrite simples et tuberculeuses. P. Bazy.
7 *L'energie de croissance (of growth). F. Trémolières.
8 *Pero Balsam in Treatment of Compound Fractures. J. Dumont.—Le baume de Perou dans le traitement des fractures.
9 *Effects of Tuberculin Injected Immediately After Tuberculous Infection. A. Marmorek. From society report.
10 (I, No. 1.) *Direct Examination of False Membranes. Deguy and Fairy. From society report.
11 Autopsie du cecum. M. Letulle. Twenty-five cuts.

1, 3 and 4. **Foreign Bodies in the Bronchi.**—Lermoyez describes the history of a prune stone which entered the air passages during a fit of coughing. The subject was a healthy young woman, but all attempts to remove the stone through the natural routes or a tracheotomy incision proved fruitless, and she died in a few days with symptoms of bronchopneumonia. He had the impression that his intervention had aided in the impaction of the foreign body and the fatal result. In contrast to this occurrence several years ago, he relates the history of a tack slipping into the bronchi recently in the same way. He was able to locate it exactly with radioscopy, examine it through the bronchoscopé, and he might have withdrawn it by the natural route with a magnet if he had had one of the proper shape. As it was, low bronchoscopy through a tracheotomy incision, followed by the application of the magnet, resulted in the immediate withdrawal of the tack. A foreign body not attracted by the magnet could have been readily removed with forceps under the same conditions. He lauds the great value of Killian's bronchoscope as "lifting the veil that has hitherto concealed the bronchi from our view." Béclère gives a number of radiograms of foreign bodies in the bronchi and emphasizes the superiority of radioscopy to radiography for these cases. The former shows whether the foreign body is loose or impacted. When a radiogram is taken it should be during apnea, as he shows by comparison of the results thus obtained. Guisez describes the technic of bronchoscopy with numerous cuts, including one of a phantom bronchus for practice.

5. **Tuberculosis in the French Army.**—De Lavarenne confirms the recent assertions of the medical members of the French parliament in regard to the dissemination of tuberculosis throughout the farms and villages by returned soldiers. The removal from a country life to the barracks and the stress of military life are liable to fan a latent tuberculous affection into a blaze, and large numbers of the recruits develop serious tuberculosis during their first year of compulsory military service. When dismissed, they return home to become a focus of infection for the farm or village. Even during their term of service they are liable to infect other healthy recruits. He states that the candidates are examined with such haste that less than thirty seconds was devoted to each one in the last examinations at the recruiting office for the Seine department. It follows that many really healthy young men are rejected while others are accepted when a more careful examination would have revealed incipient or latent tuberculosis. Country physicians say that the proportion of tuberculous patients is constantly increasing in their practice where formerly they were rare. Some have now from 20 to 30 per cent., and one reports 60 to 70 per cent.

6. **Diagnosis of Pyelitis and Pyelonephritis.**—Bazy mentions that when inflammation of the lower part of the ureter is determined we may safely assume total ureteritis and pyelitis, as a circumscribed ureteritis has never been known to date. Pyelitis or pyelonephritis may exist without the classic symptoms, and the functional signs, pollakiuria and terminal pain or hematuria at micturition may be ascribed to a real

or imaginary cystitis. Abnormal frequency of micturition at night in comparison to the day should arouse attention, whether the abnormality is in a greater or lesser frequency than the daytime desires, in comparison to normal. Another sign is the presence of pus in too large proportions to be ascribed to the bladder alone, a deposit of 1.5 to 2 cm. at the bottom of the vessel. Pyelitis and pyelonephritis may induce pain on pressure of a point on a horizontal line passing through the umbilicus, at a short distance from the latter, almost exactly over the outer margin of the rectus muscle. He calls this tenderness the paraumbilical or upper ureter pain. Another painful point is just below the costal arch; another at the apex of the costomuscular angle. The latter is the lumbar pain. The first, the paraumbilical, is the most frequent, the most painful, and frequently appears alone. Pressure at this point is sometimes more painful than on the kidney itself, and sometimes induces a desire to urinate. He calls this the pyelovesical reflex. It is impossible or difficult to palpate the ureter through the vagina in health, but in case of inflammation it can be felt as a cord, more or less tender its entire extent, and especially at its orifice in the bladder. Pressure at the latter point is sometimes accompanied by a desire to urinate and sometimes by an ascending pain felt in the corresponding lumbar region. This latter pain is characteristic and suffices alone to establish the diagnosis of pyelitis even when the ureter is not directly palpable. In the male subject the same kind of pain is induced by pressure on the fundus of the bladder just above one of the horns of the prostate. Palpation through the rectum in the male subject is thus almost as instructive as through the vagina in the female. In case of bilateral kidney affections the upper and the lower ureter pains are sometimes crossed in respect to their intensity. In conclusion, he insists on the value of nocturnal pollakiuria as the most important of all signs for the differentiation of pyelitis. In treatment, a milk diet and rest are the most important and most efficient measures at our command, and usually suffice in recent cases.

7. **Growth Energy.**—Trêmolières thinks that the day is at hand when we will be able to estimate the energy of growth just as we now estimate the energy of heat, light, mechanical force and electricity. The phenomena of growth evidently depend on the materials of cell nutrition, lecithin, salts, etc., supplied in the food, dissolved in the water the organism absorbs, and penetrating into the cells by the processes of osmosis, under the influence of the organic electricity. Growth energy is a colossal force, as we see solid rocks split by the growth of the roots that have penetrated into their interstices. When we are able to measure it and know more about it we may be able to stimulate the development of the human body or correct its growth when it is arrested or abnormal.

8. **Balsam of Peru Treatment of Compound Fractures.**—During the last four years van Stockum of Rotterdam has treated as follows all of the compound fractures at the city hospital, of which he is the surgeon-in-chief: All foreign substances are removed with sterile forceps, but the wound is not washed nor disinfected, and no ligature is applied unless a large artery is bleeding. Balsam of Peru is then poured copiously into the wound, its penetration promoted by moving the limb a little. The fracture is then reduced as if it were a simple fracture, and the wound is dressed with gauze impregnated with the balsam under an impermeable covering. The limb is then immobilized in a plaster cast for three weeks, the dressing left undisturbed. The temperature always rises at first, but not seriously, and subsides to normal by the fifth or sixth day. At the end of the three weeks the mortified tissues are found mummified; the edges of the wound show no trace of redness nor swelling; the bones are found consolidating, and the wound granulating normally. He seldom had occasion to apply the balsam more than once or twice in 90 cases thus treated, including 58 of the legs, 4 of the thigh, 15 of the arm, 2 of the pelvis, 1 of the patella, 2 of the calcaneum, and 8 of the lower jaw. The treatment was a complete success in all but 4 cases. In these there was some suppuration, but all recovered without a second operation except in one case, in which gas gangrene necessitated secondary amputation. In 8 cases healing was delayed by the presence of a foreign body, causing a fistula, and requiring removal. The effects of this treatment can not be due to any bactericidal effect of the balsam, but rather to its action in stimulating the living tissues. They corroborate those obtained by Landerer in tuberculosis with cinnamic acid, one of the elements of Peru balsam.

9. **Effects of Tuberculin Injected Immediately After Tuberculous Infection.**—Marmorek attributes the effect of tuberculin to its action on the tubercle bacillus itself, not on the lesions it induces. He believes that tuberculin in contact with the bacilli causes them to secrete an entirely different toxin which is responsible for the febrile reaction observed. He has found it possible to induce this reaction by injecting tuberculin a few minutes after inoculating guinea-pigs with tubercle bacilli. Twenty hours after the inoculation there is no reaction to the tuberculin, probably because by this time the bacilli have been taken up by the phagocytes. The reaction occurs again, however, after sufficient time has elapsed for the bacilli to regain their liberty by destroying the phagocytes in which they were enclosed.

10. **Direct Examination of False Membranes.**—Deguy and Patry affirm that the method of examination described has seemed to them in many cases more rapid and more exact than diagnosis from cultures. The fibrin is dissolved out, and nothing is left but the stained microbes, grouped as they have been in the false membrane. A scrap not larger than 1 to 5 mm. of the false membrane, as thin as possible, is rinsed in distilled and sterilized water. It is then stained with a mixture of 30 c.c. of an alcoholic solution of methylene blue and .01 c.c. of potassium in 100 c.c. of water. It is left in contact with this solution for ten to fifteen minutes, and then rinsed again in distilled water, dried with blotting paper, and a drop of a 1/20 solution of potassium is placed on it and left in contact for twenty to thirty minutes. The excess of fluid is removed with the edge of a piece of blotting paper, and then a drop of potassium silicate is placed on the specimen. Another strip of glass is then placed over it and the whole is compressed by applying a weight or squeezing with forceps while the silicate is dried for ten minutes in an incubator. The two glasses are then firmly glued together and the specimen is ready for inspection.

Semaine Médicale, Paris.

12 (XXIV, No. 1.) *Le traitement chirurgical des perforations de l'intestin dans la fièvre typhoïde. M. Cazin.
13 *La colite muco-sanguine, ou fausse dysenterie des pays chauds, et son traitement. E. H. Blanc.
14 *Nouveaux faits sur les rayons n d'origine physiologique. A. Charpentier (Nancy). From society report.
15 *Action du radium sur les différents tissus. J. Danysz. From society report.
16 *Détermination du minimum perceptible et de la durée de la perception lumineuse chez les personnes dont la vue est affaiblie. S. Durand. From society report.

12. **Surgical Treatment of Typhoidal Perforation of the Bowel.**—Cazin has been able to find on record 358 cases of perforation of the bowel in typhoid fever in which operation was performed. The list includes one from his own experience and Keen's 158, as also the statistics of Mauger, Cariès, Junqua, Pédarré and Elsberg. Of the entire number, 107 of the patients recovered, a proportion of 29.88 per cent. Only 49 of the entire list were reported in France, the recoveries numbering 9. He pays tribute to the Americans as the leaders in this line. He regards leucocytosis as of secondary importance for the diagnosis, as it is inconstant and tardy. The hour of the intervention was mentioned in only 48 of the series of 63 successful cases, dropping all the incomplete and dubious records. In 38 of this 48 the operation was undertaken within twenty-four hours of the perforation, and only in 10 later than this. One recovery is reported by Cardi with an interval of forty-eight hours. The patient was a girl of 13 with diffuse peritonitis following a typhoidal perforation about 10 cm. from the ileocecal valve. Depage has also reported the recovery of a woman of 42 operated on three days after the perforation. He cut a V out of the intestine and closed the wound in the intestine with a suture in two

tiers. To relieve the distended intestine he made several capillary punctures, and the patient, whose condition had been desperate, recovered complete health. Ether or chloroform has generally been preferred to local anesthesia, and a very small amount proved sufficient for the purpose. The perforation was usually found in the last 50 cm. of the ileum, more rarely in the appendix, colon or cecum. In the 219 cases in which the site was mentioned, the laparotomy was lateral in 123 and on the median line in 99. A Lembert suture with silk was the general choice. Catgut is absorbed too readily, and in a few cases when it was used the suture gave way. Certain surgeons have freshened the edges of the perforation or resected the ulcerated zone, but Cazin does not regard this as essential, and it merely prolongs the operation. Owing to the friability of the coats of the intestine it is wise to take the suture through a fold, some distance from the edge of the perforation. Two rows of sutures with separate stitches will generally ensure the closure of the perforation. In one case Legueu utilized a piece of omentum to patch the hole with. A stercoral fistula developed the fifth day, but it healed spontaneously by the twentieth day and recovery was complete. Escher advocates suturing the lips of the perforation to the abdominal incision, to prevent danger of occlusion from paralysis of the intestines. Cazin thinks that the successes obtained by suturing the perforation at once render this procedure superfluous. In case the ulcerated zone threatens further perforations he would pack strips of gauze around it to wall off infection from the abdominal cavity in case further perforation should occur, rather than to inflict such a serious operation as resection of the bowel on the enfeebled patient. Leconte thus packed a case with several suspicious points, and thirty-six hours later a large mass of pus and feces was evacuated. The patient recovered and the fistula closed spontaneously in four weeks. When the peritonitis is already diffuse—as it generally is—the abdominal cavity should be copiously rinsed with hot saline solution. This indication is one of the reasons why general anesthesia is preferable. Multiple and efficient drainage should not be neglected.

13. Treatment of Muco-Bloody Colitis or the False Dysentery of the Tropics.—Blanc writes from Shanghai and describes the treatment which he has found most effectual for the diarrheic sickness which he calls false dysentery: Castor oil in the morning, no food until evening, when a soft-boiled egg or chicken broth is allowed, and at bedtime a goblet of a decoction of 60 gm. simaruba bark and 30 gm. cinnamon bark in 2,500 gm. water. Reduce to 2,000 or 1,750 gm. and add three tablespoonfuls of brandy. Four glasses are taken during the twenty-four hours for several days, adding a little laudanum if the stools are bloody. If there is nausea and vomiting, the second day the decoction is suspended and a dose of castor oil given instead. During convalescence castor oil is needed if thirty-six hours pass without stool. The food should be restricted to soft-boiled eggs, chicken broth, toast and boiled poultry. The after-condition requires treatment; healed ulcers reopen and require to be dressed. This local treatment is realized by bismuth internally to afford a protecting coating for the ulcerated walls, supplemented by systematic injections. He prefers for the latter a mixture of 10 gm. of bismuth subnitrate ground in a mortar, to which are added 1 gm. of gum tragacanth and 10 gm. of bismuth salicylate. When well ground together he adds 75 gm. of water and sets aside. He then adds later 425 gm. of water and filters through muslin. This injection is to be retained and repeated every second or third day, with boric acid enemata in the interim.

14. Further Data in Regard to the N-Rays of Physiologic Origin.—Charpentier announces that the emission of the n-rays by the living organism, mentioned on page 275 of the last issue, has nothing to do with heat, as they are emitted likewise by cold-blooded creatures. Contraction of a tendon does not increase the production of the rays along the course of the tendon, but only at its points of attachment. He ascribes this fact to the abundance of nerve terminals at these points. He has also found that compression of a nerve enhances its luminous properties. The functional activity of a nerve center is revealed by intensification of the luminosity over it. For instance, when the arms are moved the cervical enlargement of the spinal cord becomes more luminous. The center of Broca can also be located in the same way by having the subject speak in a low or loud voice. The results are less distinct with other centers. [These new rays were discovered in the laboratory at Nancy, France, where Blondlot is professor of physics. He called them the n-rays from the initial letter of the name of the city. Among their remarkable properties is that they pass through saline water, through lead .2 mm. thick, platinum .4 mm. thick, through tinfoil, a book of paper containing twenty-one sheets of gold leaf, mica, glass, paraffin wax and even sulphur, but they are arrested by pure water. Cigarette paper moistened with pure water will arrest the rays, while they will pass without hindrance through 4 cm. of normal saline solution. The rays are emitted by certain bodies, such as wood, glass and rubber, when forcibly compressed or twisted. Tempered steel, crystallized sulphur and hammered metals are permanent and spontaneous stores of the n-rays. Non-tempered steel is inactive. These and other properties of the rays are discussed in the *British Medical Journal* of January 9. Charpentier announces in still later research than the above that the heart, diaphragm and other muscles emit rays different from those emitted by the nerves, which are partly arrested by aluminum, while those from the former are not modified by it. Another difference is that the rays emitted by the nerves have a much stronger action on the phosphorescence of sulphur previously heated to 40 or 45 C. They are, therefore, not the true n-rays of Blondlot.—ED.]

15. Action of Radium on Different Tissues.—Danysz relates experiences which show that the effect of the radium rays is more intense in young than in adult animals. He applies this fact to explain the selective action of the rays on neoplasms, while they traverse skin and muscle without appreciable action on them.

16. Minimum Light Perception.—Durand suggests the use of a gas flame as a test for the minimum of light perception and also its duration. The flame can be turned down gradually until the subject no longer perceives it.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

17 (XXX, No. 2.) *Ueber einige seltene Lokalisationen des akuten umschriebenen Oedems. H. Quincke and A. Gross. (Commenced in No. 1.)
18 *Zur Pathologie und Therapie des Cardio-Spasmus. J. v. Mikulicz. (Commenced in No. 1.)
19 *Weitere Versuche zur Darstellung spezifischer Substanzen aus Bakterien. Cholerabazillen. M. Mayer.
20 Alterability of Valerian Preparations. M. Kochmann (Jena). —Ueber die Veränderlichkeit der Baldrianpräparate.
21 *Musical Heart Sounds. G. Galli (Baccelli's clinic, Rome). —Zur Lehre von den musikalischen Herzgeräuschen.
22 Zwei Fälle von Meningitis basilaris simplex. M. A. Luns (Moscow).
23 New Method of Treating Lupus and Malignant Neoplasms by Means of Molecular Disintegration by Continuous Spark-Currents of High Frequency and High Tension. H. Strebel (Munich).—Eine neue Behandlungsweise für Lupus und bösartige Neubildungen mittelst molekulärer Zertrümmerung durch kontinuierliche hochgespannte, hochfrequente Funkenströme.

17. Unusual Localizations of Acute Circumscribed Edema.—Since Quincke described this condition in 1882 he has had occasion to observe a number of unusual cases. In 4 the circumscribed edema affected the deep connective tissue. In the first 3 there was swelling of the periosteum concomitant with transient edema of the skin. The ulna, radius, small bones of the hand and the brow were thus involved, the periosteum somewhat tender. In 2 of the cases the swellings subsided in one day, but in another they lasted several weeks. Radiograms of the limbs showed no abnormal shadow, confirming the assumption of edema. One of these patients was a child. The affection probably originated in intestinal autointoxication. The attacks in one alcoholic and one neurasthenic subject recurred occasionally and with no appreciable cause. The fourth patient was a young woman with well-compensated aortic insufficiency, who exhibited painful swellings of the periosteum of radius, humerus, ribs and frontal

bone, each lasting several days, but disappearing much more rapidly than would have been possible with true periostitis. The symptoms were evidently due to an acute angioneurotic edema of the periosteum and connective tissue. The headaches likewise noted may have been due to an angioneurotic hydrocephalus. In 3 other cases the larynx was the seat of the acute edema. One was a youth of 17 who had two attacks, neither very serious. The second patient was a workingman of 26 who had suffered from eleven attacks of idiopathic edema of the larynx, otherwise healthy. The absence of coughing and pain and the acute onset spoke against tuberculosis or syphilis, and the non-febrile course and absence of other symptoms, against erysipelas. In a third case the lower air passages were likewise involved, the patient a young woman, a cook. The onset of the edema was acute and threatening, and the dyspnea and signs of pulmonary edema were so intense that she was carried to a hospital within thirty minutes of the first symptoms. By evening the lung findings were normal, but the development next day of edema of the upper lip, spreading until the eye was closed, cleared up the diagnosis. She stated on questioning that she had had such attacks during the last six years, but never so severe as the present one. Wright, Müller and Jamieson have reported similar cases, and Schlesinger believes that a certain number of cases of bronchial asthma belong in this category. In a further series Quincke describes a circumscribed edema affecting the tongue or soft palate and extending apparently into the digestive tract. These 3 patients were men, 18 to 56 years old. The transient character of the gastric disturbances and their association with circumscribed edema of the skin implied the probability that they were of the same character. The edema of the uvula in the third case was not accompanied by pain or fever, and the neighboring tonsils and pharyngeal mucosa were apparently intact. The symptoms on the part of the stomach and intestines suggested a gastro-intestinal catarrh, with the difference that they developed spasmodically and were not accompanied by any pain or tenderness in the entire digestive tract. The vomit after the food had been evacuated was a large amount of strongly alkaline fluid containing quantities of albumin and a very little blood and bile. These findings suggested the possibility that the edema observed in the uvula had extended down into the digestive tract and induced the secretion of the peculiar fluid noted. The bleeding was minimal and probably only the result of the violent retching. The urine the first day was highly concentrated and contained large amounts of indoxyl, probably from absorption by the altered intestinal mucosa. No cause for the attack could be discovered. The patient was a physician, 56 years old, who had been well up to the moment of the attack, leading his usual, regular life, with appetite for his food. Three days previously he had eaten some oysters and mushrooms. He had never before had any symptoms after eating them, and none of the other persons at the banquet had apparently suffered. An incubation period of sixty hours seems rather long, but has been noticed in other ptomain poisonings. It is possible that the absorption of the poison from the mucous lining of the digestive tract may have acted on the vasomotor, especially the trophic nerves, and caused the attack, similarly to "strawberry" urticaria. No attack of the kind nor of acute cutaneous edema had ever occurred in the patient's experience nor in that of any other member of the family. It is evident that intermittent hydrops of the joints and angioneurotic hydrocephalus belong in the category of this acute circumscribed edema. The basal type is comparatively simple and easily recognized, although there may be transitional forms with urticaria and erythema multiforme. We can assume that the same process as occurs on the skin may develop on the mucosæ, periosteum and connective tissue, possibly also in the muscles. This circumscribed angioneurotic exudation may likewise be responsible for acute, transient, "rheumatic" pains in the muscles, and for many neuralgias, for migraine and for certain of the manifestations of hysteria, as also for some of the disturbances of central origin in the motor and psychic field.

16. **Stenosis of the Cardia as Cause of Dilatation of Esophagus and Cure for It.**—Mikulicz reviews in detail the physiologic data on which he bases his assumption that dilatation of the esophagus is due primarily to contraction of the cardia. He describes a simple contrivance with which he is able to determine the pressure in the esophagus and obtain insight into its functions and the behavior of the cardia. To prevent and cure dilatation of the esophagus and its train of evils he advocates forcible dilatation of the cardia, similar to Récamier's method of forcible dilatation of the anus in case of painful fissure. He had an instrument made for the purpose, to be operated through the mouth and esophagus, but could never bring himself to operate in the dark as he had at first proposed, fearing that he might lacerate the cardia, with fatal peritonitis or mediastinitis in consequence. He therefore preferred to operate by way of the stomach, and now announces that he has performed this operation in 4 cases and apparently with perfect success. His first patient was a workingwoman of 30, who had been under treatment for six years, and the condition was growing constantly more deplorable even after gastrostomy. The fistula was enlarged, the stomach opened to admit the hand freely and, under control of two fingers, a long, curved forceps, the blades covered with rubber, was worked into the tightly closed cardia for 4 cm. The forceps was then gradually opened until the maximal distance between the backs of the blades reached 6 cm. The cardia was then stretched to its utmost, but without trace of tearing either in the muscle or mucosa. Two fingers could readily be passed into the esophagus beyond the hiatus esophageus. The wounds in the stomach and abdominal walls were then sutured, and after fluid food for two weeks the patient was able to eat any kind of food, and has been free from all disturbances, and has gained remarkably in weight since the operation was performed, Feb. 7, 1903. The second patient was a Berlin merchant, 39 years of age, and since the operation, last July, he has gained over 50 pounds. The 2 other patients were operated on in last October and November. The functional result in each case has been perfect to date. The cause of the retention in the esophagus was removed at one stroke, and in the 2 earliest cases radioscopy shows that the dilatation of the esophagus is gradually retrogressing.

19. **Production of Specific Substances from Bacteria.**—Mayer has continued his research in this line, and states that it has been crowned with success in the case of both typhoid and cholera bacilli. The addition of a weak alkaline ammonium sulphate to both kinds of bacteria causes an autolysis which results in the passage into the filtrate of specific substances from the bacteria. The same result can be obtained with cholera bacilli by shaking them for six to forty-eight hours at room temperature. The serum of rabbits inoculated with the filtrates thus derived acquires remarkable bactericidal power.

21. **Origin of Musical Heart Sounds.**—Galli illustrates a case which establishes that it is possible for an aberrant muscle fiber to induce a musical sound when the wall of the heart is indurated and the course of the blood stream induces vibration in the fiber.

Münchener med. Wochenschrift, Munich.

24 (L, No. 52.) *Importance of Normal Intestinal Bacteria for Man. J. Strasburger (Bonn).—Ueber die Bedeutung der norm. Darmbakterien für den Menschen.
25 Ueber mehrfaches Vorkommen der Taenia saginata beim Menschen (two of the parasites in case described). Riehl (Klasingen).
26 Taenia cucumerina s. elliptica bei einen 6 Monate alten Kinde (in infant). G. Sonnenschein (Olmütz).
27 *Alterations in Testicles of Animals After Exposure to Röntgen Rays. Frieben (Hamburg).—Hodenveränderungen bei Tieren nach R.-Bestrahlung.
28 Toxin und Antitoxin. P. Ehrlich.
29 Ibid. M. Gruber.
30 Reply to Volhard in No. 49. K. Glaessner (Ewald's clinic, Berlin).
31 Das Röntgen-Instrumentarium für den Praktiker. Walter. Ibid. Albers Schönberg.
32 Wie lebt man in Egypten? Goebel (Breslau).
33 (LI, No. 1.) Ueber den Herpes zoster oticus. (Herpes an der Ohrmuschel mit Lähmung des Nervus acusticus und des Nervus facialis.) O. Körner (Rostock).
34 *Zur modernen Lehre der Eklampsie. E. Wormser (Basle).

35 *Ueber die Behandlung des frischen Dammrisses (of recent laceration of perineum). C. J. Bucura (Chrobak's clinic, Vienna).
36 *Fatigue Toxins and Their Antitoxins. Weichardt (Berlin).—Ueber Ermudungstoxine und deren Antitoxine.
37 *Die Staphylokokken des chronischen Ekzems. F. Veiel (Neisser's clinic, Breslau).
38 *Exposure of Heart to Right of Sternum. E. Rotter.—Zur Herafrellegung, auch rechts vom Sternum.
39 *Open Treatment of Wounds by Exposure to Sunlight and Dry Air. O. Bernhard.—Ueber offene Wundbehandlung durch Insolation und Eintrocknung (zugleich Einiges über klimatische Einflüsse des Hochgebirges).
40 *Hitherto Unknown Factor of Mountain Climate. Saake (Schöningen).—Ein bisher unbekanntes Faktor des Höhenklimas.
41 Ruptur eines Aneurysma und Unfallsrente (and accident insurance). Marckwald.
42 Modifikation der Beckmannschen Rachen-Kurette. A. Rosenstein (Breslau).
43 *Handcuffs for Narcoses. M. v. Holst (Dresden).—Handfessel zur bequemen Uebersicht und Ausführung von Narkosen.
44 *Treatment of Hemorrhagic Nephritis. Baccelli. Letter from Rome.

24. Importance of Intestinal Bacteria in Normal Conditions.—Strasburger ascribes great importance to the action of bacteria in breaking up the cellulose cover of certain of the articles of food. He also calls attention to the fact that in normal conditions putrefaction does not occur in the small intestine, but is restricted to the large. The same bacteria are found in each, but recent researches suggest that the carbohydrates are able to protect the albuminoids against putrefaction. The lack of putrefaction in the small intestine he, therefore, attributes to the combination of intestinal bacteria and of carbohydrates. As the latter do not reach the large intestine in the same proportions, the bacteria alone are unable to prevent the development of the microbes which induce putrefaction. The chemical and mechanical stimuli from the presence of the intestinal bacteria promote peristalsis. Cases of habitual obstipation usually show a subnormal amount of these bacteria, especially of the colon and lactic acid bacilli, which he regards as the most important of the normal intestinal flora. As long as the walls of the intestines are sound the bacteria do not penetrate them, but the products of their metabolism are liable to be absorbed and may be responsible for certain general disturbances, such as headache, fatigue and depression, and also for certain skin affections. Metchnikoff's recent remarks in regard to the superfluous length of the large intestine, and his suggestion that it might be dispensed with, are answered by Strasburger to the effect that he would rather live a few less years than live longer with a constant, chronic diarrhea, which would be the necessary consequence of the removal of the large intestine. He summarizes his arguments in the statement that it is not the task of the practitioner to free the intestines of bacteria. Our efforts should aim to maintain the normal bacterial flora in normal conditions and normal proportions.

27. Alterations in Testicles of Animals Exposed to Roentgen Rays.—All the male rabbits and guinea-pigs exposed to the Röntgen rays proved sterile thereafter, as was mentioned in the report of Albers-Schönberg's experiences recently mentioned. Frieben adds now that none of the other organs of the animals showed any naked-eye changes, but the testicles were invariably found shrunken to one-third or one-half their former size, but otherwise apparently normal. The microscope revealed, however, that the epithelium of the tubuli seminiferi had almost entirely vanished and not a trace of spermatogenesis could be detected. There was no evidence of inflammation, and the intertubular connective tissue was apparently normal. The most labile cells of the organ had manifestly been affected by a degenerative process under the action of the Röntgen rays.

34. Modern Theories of Eclampsia.—Wormser describes tests of syncytiolytic serum, made according to the various theories and technics of Veit, Ascoli and Weichardt, as well as Liepmann's and his own. The results were inconclusive and unexpected in several ways.

35. Perineum Tears.—Bucura states that it is the rule at Chrobak's clinic to suture the tear at once. The experiences of 1901 were 279 healing by primary intention out of 313 sutured at once (in 3,333 births). Of this number 5 were slightly febrile and 3 febrile cases. In 16 others the wound healed partly by primary intention, and in only 18 was the healing secondary. Of the total 313, 93.6 per cent., healed without temperature; 2.6 were slightly febrile and only 3.8 had temperature, and these included a number with pneumonia, ulcers or endometritis.

36. Fatigue Toxins and Antitoxins.—Weichardt has found that the expressed juice from muscles of over-fatigued animals, injected into other animals, causes toxic symptoms after a latent period of twenty to forty hours. This fatigue toxin is destroyed by a temperature of 56 C. The juice is not toxic at first, but gradually acquires toxicity during the first forty-eight hours, and then gradually loses it again until all has vanished by the end of the week. He thinks that the toxic quality develops in consequence of a fermentative digestive process in the aseptic muscle juice. This assumption was confirmed by the fact that the onset of toxicity could be hastened by keeping the juice at 37 C. Intraperitoneal injection of the toxic fatigue-muscle plasm conferred on the serum of the rabbits thus treated a marked antitoxic power. The antitoxic serum thus produced was able to neutralize the fatigue toxin *in vitro* and in the animal body in a most conclusive manner. It is very resistant. He is now engaged on research to isolate the various elements of the toxin, separating the fatally toxic from the merely fatiguing elements.

37. Staphylococci in Chronic Eczema.—Veiel finds constantly and exclusively in the early stages of chronic eczema a staphylococcus identical with the essential pus cocci. It is found almost exclusively in the later stages. He thinks that the absence of other germs in the early stages excludes a specific germ for eczema.

38. Operations on the Heart.—Rotter has collected 46 cases in which suture of the heart was attempted. The recoveries number 19, or 41 per cent. He remarks that the flap-door incision, with the base on the median line, can be made equally well on the right side. He gives several suggestions for the perfection of the technic, and adds that exposure of the heart by this method is simple, and may be found useful for resuscitation in case of sudden death.

39. Sun, Air and Mountain Climate in Treatment of Open Wounds.—Bernhardt commenced to practice in the Engadine in 1886, and was at once impressed with the way in which wounds healed there. This, in addition to the beneficial effect of the mountain climate on tuberculosis, suggested that the conditions most favorable for operative treatment and healing of surgical tuberculosis and open wounds in general seemed to be combined there. Fresh meat hung up in the open air and sunshine dries, while retaining its flavor, and the aspect of meat thus dried suggested to him a similar method of treating open wounds. His first case was a patient who had been stabbed at seven points in the abdomen. The spleen had to be removed and the laparotomy wound burst open the eighth day and could not be sutured again. The edges were approximated with plaster, and the wound exposed for hours to the almost continual natural sunshine. The wound healed rapidly, and the results were so unexpectedly favorable that during the two years since, this method has been applied in nearly every case of open wounds and of closed lesions not far from the surface, especially tuberculous joint affections. The sunlight is particularly powerful among the mountains, as the chemical rays are not absorbed by impurities or moisture in the air, and the secretions of the wounds rapidly dry up under the influence of the dryness of the air. The wound becomes covered with a parchment-like skin, which protects it as well as any dressing under the clothing. Deep pockets heal rapidly under this exposure to the sun and air, usually on a veranda or in a room with open window. He gives a number of cuts of various wounds thus treated, including a dynamite injury of the hand, exposing the bone at several points, which healed completely in five weeks; one of an ulcus cruris and one of a large septic "pocket wound," which healed to an almost linear scar in six weeks; also one of scrofuloderma. In a case of extensive burn on the leg, 39 by 20 cm., which had proved rebellious to Thiersch grafting, after three months of sunlight treatment the knee-joint can be flexed to 90 degrees and ex-

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tension is normal. The burn was of the second and third degree. In a case of septic bursitis of the oleeranon with extensive skin defect, healing was complete in three weeks, with no trace of contracture.

40. **Radio-active Factor in Mountain Climate.**—Saake refers to the emanation of radio-active substance from the air, which Elster and Geitel first described in the *Physikal. Ztft.*, in 1902. He has found that it averages three to five times as much in the mountains as at the level of the sea. The difference in tension between the positive air and the negative earth—the potential—also increases with the altitude. His experiments indicate that these electric and radio-active factors have some share in the benefits of the mountain climate and that they might possibly be artificially increased.

43. **Handcuffs for Narcosis.**—The hands are drawn near together above the head, and are held in this position by a strap on each wrist, connected by a third long strap, which hooks into a screw ring on the edge of the table below, just under the patient's head. The hands and arms rest comfortably on a cushion, and while they have considerable play, yet they are unable to obscure the field of operation or the face.

44. **Treatment of Hemorrhagic Nephritis and of Early Stages of Nephritis in General.**—Baccelli has been treating these conditions for twenty years by endeavors to relieve the venous congestion in the kidney, which he considers mainly responsible for them. Stagnation of the venous blood entails degeneration of the epithelium and loosens it from its foundation. If the blood pressure in the ascending vena cava can be reduced or rendered negative, then the stagnating blood in the kidney is sucked into the vein and the kidney is given a chance to recuperate. This effect is most readily realized by tapping some remote branch of the vein. He withdraws as much as 300 gm. of blood from the vena pedidia. The results are surprisingly favorable. In a very severe case described the centrifugated sediment of the urine could scarcely be distinguished from pure blood under the microscope, but after the venesection the albumin disappeared at once from the urine, the blood soon followed, and in a few days the child was entirely restored. The result is neither so prompt nor so energetic when the blood is drawn from the arm.

Hospitalstidende, Copenhagen.

Last indexed XLI, page 1123.

45 (XLVI, Nos. 35 and 36.) *Pathologic Changes in Digestive Tract in Pernicious Anemia. K. Faber and C. E. Bloch.—De patologiske Forandringer i Fordöjetseskanalen ved den pern. Anemi.

46 *Red Light Treatment of Smallpox. Niels R. Finsen.

47 (No. 37.) Public Measures for Combating Tuberculosis. K. Faber.—Om "det öffentlige's" Forhold til Kampen mod Tub.

48 Medical Affairs in Greenland and Suggestions for Reform. A. Bertelsen.—Til Belysning af Laegevaesenets Ordnung i Grönland.

49 (Nos. 38 and 39.) *Experiences with Iodised Catgut. M. Claudius.—Erfaringer angaaende Jodkatgut.

50 *Om Emfysemet i Orbita. C. F. Heerfordt.

51 (No. 40.) Modern Principles of Hospital Construction. R. Blom.—Om de mod. Principper for Bygning og Indretning af Hospitaler.

52 Wire Basket for Object Glasses. R. Kjer-Petersen.—En Objektglaskurv. Bidrag til Tuberkelbacillfarvningens Teknik. One cut.

53 (No. 41.) Meiselag's Kolorimeter anvendt til Hemoglobinbestemmelse. P. Liebmann.

54 Undersögelser over Virkningen af Mm. cricothyroideus og thyreo-arytaenoideus internus. J. Möller and J. F. Fischer.

55 (No. 42.) *Nogle Tilfaelde af Trichinose. G. Schroll.

56 (No. 43.) *Formation of Uric Acid in Human Body. H. Trautner.—Over Urinsyrens Dannelse i det menneskelige Legeme.

57 (Nos. 44-46.) Om Elephantiasis, saerligt Aetiologien, i Anledning af et Tilfaelde af Elephantiasis lymphorrhagica. P. Haslund.

58 (No. 47.) Stomach Content in the Aged. H. Seidelin.—Undersögelser af Mavelndhold hos aeldre Individer.

45. **Digestive Tract in Pernicious Anemia.**—Four cases carefully examined and those reported by others indicate, according to the opinion accepted by Faber and Bloch, that the diffuse gastritis frequently observed in pernicious anemia and the anemia itself are subordinate to some primary cause. The digestive tract otherwise appeared normal. The absorbing and secreting functions seemed to be unimpaired. The most plausible theory for the origin of pernicious anemia is the assumption that it is the effect of some poison generated in the organism, and that this poison affects most perniciously the blood and the stomach. The lack of pathologic changes in the digestive tract below the stomach is no evidence against the assumption that this poison is generated in the intestines. In the one case of bothriocephalus anemia on record in which the intestines were examined less than an hour after death, the absence of pathologic changes in the intestinal walls was likewise marked, and yet there could be no question that the poison was generated by the parasite in the intestines in this case.

46. **Red Light Treatment of Smallpox.**—Finsen's reply to Schamberg's article in THE JOURNAL of May 2, 1903, was published in full in a later issue, page 1207, of the last volume. He gives the same here in Danish, and adds a list of five communications that have appeared during 1903 on the red-light treatment of smallpox, and all report favorable results. Besides this, he has had reports of two small epidemics on the Faroe Islands and in England, in which the red-light treatment produced an unmistakably beneficial effect. Naunyn was especially favorably impressed with its action in 11 cases at Strasburg, although one exceptionally severe confluent case terminated fatally. Emmerson, in a private letter to Finsen, expresses himself much more favorably than in his published report of his experience in the *Medical Times and Hospital Gazette* of July 4, 1903. Five of his 11 patients had never been vaccinated. Carassa did not have any suppuration fever in his 6 cases thus treated, including 3 confluent ones.

49. **Iodised Catgut.**—This communication was read at the Madrid Congress and has aided in the wider adoption of Claudius' method of preparing catgut with iodin. He has never observed any symptoms of intoxication from its use, while the catgut thus prepared is proving ideal in many respects. The technic was given in THE JOURNAL of Feb. 7, 1903, page 412.

50. **Emphysema.**—On the ground of 2 clinical cases and 16 experiments on the cadaver, Heerfordt describes the mechanism and symptoms of this condition. The article is illustrated.

55. **Trichinosis.**—Six cases are described and the various diagnostic points reviewed. Schroll thinks that the mild and isolated cases are frequently unrecognized. The affection may simulate typhoid at first with its fever, diarrhea and general ill feeling. In some of the cases the fever, ill feeling and pains in the limbs were attributed to influenza for several days until the attention was attracted to the edema. One mild case was assumed to be merely manifestations of the uric acid diathesis, and while the patient was being treated on this assumption the other members of the family began to exhibit the same symptoms, and the edema of the eyelids then attracted attention. An intoxication or infection was then assumed, with a suspicion as to trichinosis. A confrère called in consultation derided the latter diagnosis, and remarked that he had a number of cases with precisely the same symptoms in his charge at the time. The presence of a small, mild epidemic of trichinosis was later established. The edema, tenderness of the muscles and their infiltration testified against influenza. A gastro-intestinal catarrh with diarrhea, abdominal pains, edema of the eyelids and pains in the limbs may simulate the clinical picture of mild trichinosis, as he portrays by a typical case described. The pains are not localized in certain muscles, however, and there is no sensitiveness to pressure, infiltration nor stiffness in the muscles. The affection subsides in a comparatively short time, and the other members of the family do not present the same clinical picture.

56. **Formation of Uric Acid in the Human Body.**—Trautner presents arguments in favor of the assumption that gout in its primary manifestation is a colitis mucosa, and that the colon bacilli generate in the feces some reducing substance which becomes transformed into uric acid in its passage through the blood. Consequently, he proposes the theory that the colon bacillus is the primary cause of gout, and works up a good argument to sustain it, first establishing that the amount of uric acid in the urine increases with obstipation, that considerable diuresis and high specific gravity indicate an increased proportion, that ingestion of large amounts of albuminoids seems to increase the percentage of uric acid in

the urine, and concludes with the assertion that the purin theory is scarcely tenable.

Hygiea, Stockholm.

Last indexed XLI, page 1128.

59 (LXV, No. 10.) *Study of Growth in Height. E. Forsberg.
60 Växtlingar i människokroppens längd.
Ett fall af liggradigt infantilt myxödem med utbredd psoriasis. O. Dalsö.
61 (No. 11.) Nagra ord om axeldragningstangen (torsion forceps). E. Esen.
62 Hernia efter appendicitoperation. A. Karlow.
63 (No. 12.) Importance of Care of Convalescents and the New Endowed Convalescent Home in Connection with the Sabbatsberg Hospital. F. W. Warfvinge.—Om offentlig konvalescentvård, etc.

59. Study of the Height of the Body.—Forsaberg studies the length of the body in relation to age, sex, race, social standing and other particulars.

Russkii Vratch, St. Petersburg.

Last indexed page 318.

64 (II, No. 31.) Protargol in Gonorrheal Affections of Cervical and Uterine Mucous. V. N. Orloff.—Lyetchenie protargolom perelomlikh, etc.
65 *Organ Treatment of Tetanus. S. S. Virsaladze.—Lyetchenie stolbnyaka vpryskivaniami emulsii iz veshtchestva mozga sdorovykh zhevotnykh.
66 (No. 32.) *Importance of Bitters for the Digestion. P. Y. Borisoff.—O znatchenii gorkhikh sredstv dlya pishtcheva-renlya.
67 *Bechterew's Disease. L. M. Pussep.—Odorevenyelost posvonotchnikha (bolyezn V. M. Bechtereva).
68 Experimental Study of Physiology of Thoracic Portion of Vagus in Relation to the Question of Acute Emphysema of the Lungs. M. B. Zile.—O physiol. grudnogo otdyela blushdayushtchago nerva v svyazi s voprosom ob ostrom vzdutii legikh.

65. Organ Treatment of Tetanus.—Virsaladze's communication is based on personal experience with 7 cases and the results obtained by others, as published in European literature, especially in Slavonic publications. Three died out of his 7 patients treated with injections of an emulsion of brain substance, and in one of the other cases the tetanus was of a very mild form. But the favorable outcome in the others and in those related in the literature indicate that this treatment has a promising future. He makes the emulsion as needed, using 15 to 20 c.c. of rabbit brain in physiologic salt solution, and injecting it subcutaneously. Four injections were made in four to nine days, and subjective improvement was marked, even after the first, in one typical case. The injections were accompanied by the usual measures. The 3 severe cases terminating in recovery were in patients 39, 52 and 23 years old. The fatal cases were in patients of 19, 16 and 46.

66. Influence of Appetizers on the Digestion—Especially the So-Called Bitters.—Borisoff gives curves and tables showing the influence on the secretion of gastric juice exerted by giving his dog a little bitter substance immediately before his sham meal of meat. The dog has an opening into the esophagus and another into the stomach, according to Pawlow's technic for study of the digestive processes. The meat which he eats drops out through the hole in the esophagus, while the gastric juice flows out of the gastric fistula. Borisoff's previous research established the importance of the reflex action from the nerves of taste for the proper functioning of the secretory apparatus along the digestive canal. This view is corroborated by further tests of "bitters" as appetizers. He found that the secretions were increased by giving the dog a wad of cotton, soaked in tincture of gentian, immediately before giving him the meat. If the bitter was given as long as twenty minutes before, no effect was apparent. Others have established that large amounts of bitters have an inhibitjng action on the gastric secretions. This latest research shows that a small amount, acting directly on the nerves of taste, immediately before the ingestion of food, has an unmistakable, stimulating effect on the secretory functions. The average amount of gastric juice secreted in 6 tests without the bitter was 101 c.c., while corresponding tests resulted in an average of 131.1 c.c. in 6 tests with the gentian. The amount obtained in the course of the two hours after the sham feeding ranged from 59.3 c.c. to 126.5 c.c. in the first series, and from 85.1 c.c. to 185.2 c.c. in the second series. He concludes from his research that the stimulant action of appetizers acting on the nerves of taste is now established beyond question, but that this stimulant action is very transient and is nullified if large amounts are used. The preferable method is in the form of "appetite drops," taking ten to twenty drops in a wineglass of water before each meal.

67. Ankylosis of the Spine.—Pussep draws sharp lines of distinction between the Bechterew and the Strümpell-Marie type. In a large table he gives the details of 28 cases of the former, as recorded by various writers, including 7 by Bechterew and 12 by other Russian writers, noting the condition of the reflexes, sensibility, muscle atrophy, etc. The article was presented at the Madrid congress.

British Medical Journal, London.

January 28.

69 *Lumbago: Its Lessons and Analogues. William R. Gowers.
70 *Chronic Cyanotic Polycythemia with Enlarged Spleen. William Osler.
71 *Changes in the Spinal Cord in Diabetes Mellitus. B. T. Williamson.
72 *Note on the Tendon Reflexes in Uremia. W. Mitchel Stevens.
73 A Note on "Brachial Neuralgia." Howard Distin.
74 Respiratory Spasm Followed by Cessation of Breathing in a Recently-born Child. Robert Fullerton.
75 Hysterical Paraplegia in the Male. Frederick Smith.
76 An Unusual Epileptic Case. W. Henry Lewis.
77 Scleroderma Associated with Raynaud's Disease and Addisonian Pigmentation. George C. R. Harbinson.
78 A Modified Operation of Castration. William Thorburn.
79 Intraperitoneal Abscess Due to Pneumococcus. Stanley Boyd.
80 The Invasion Stage of Measles. Eustace Smith.
81 A Case of Extreme Hyperpyrexia. W. C. Watson Glenny.

69. Lumbago.—Gowers defines lumbago as an inflammation of the fibrous tissue of the muscles which by extension may involve the tendons, and even the nerves, the sciatic, for example. He calls special attention to a disorder similar in nature, but differing in locality, which he calls muscular fibrositis of the arm or brachial myalgia, characterized by pain in the muscles, not spontaneous, or only in a slight degree, but produced by contraction and tension, however slight. There may be tenderness to pressure also and the disorder may spread, as does the lumbosacral form, involving not only the nerve sheaths but the joint capsules. The brachial form is often mistaken and regarded as a neuritis when there is no nerve involvement. The familiar stiff neck is a milder form of this, and the muscles of the pharynx are sometimes involved. This muscular rheumatism is more common in the second half of life, and is often associated with gout. The brachial form he has seen especially in those who have an inherited tendency to gout, though not meriting its development by their habits of life. He also refers to traumatic fibrositis. As regards treatment he insists on rest, special training of the affected muscle, the use of aperients and rheumatic remedies, though they are much less effective in this condition than in rheumatism. The developed brachial form is often exceedingly obstinate. The traumatic form of tendinous fibrositis when it settled down to a stationary condition with pain on tension or even pressure resists all treatment, though it passes away in time like the other type, though the period may be long. Counter-irritation sometimes lessens the pain. Hypodermic injections of cocain seem to have a good effect.

70. Chronic Cyanotic Polycythemia.—Osler here describes a disorder which was noticed in THE JOURNAL, vol. xli, 44, p. 634.

71. Diabetes Mellitus.—Williamson calls attention to the slight excess of neuroglia tissue in Goll's columns, with a few scattered degenerated fibers in Burdach's columns and some degenerated fibers in the posterior nerve roots and posterior horn. The spinal changes are probably secondary to the altered blood condition in diabetes.

72. Tendon Reflexes in Uremia.—The exaggeration of tendon reflexes, especially knee-jerks and ankle clonus, in uremic conditions is noted by Stevens. He suggests that the exaggerated reflex is a symptom that may be of considerable diagnostic import in some cases.

The Lancet, London.

January 28.

82 *Some Forms of Chronic Abdominal Surgical Disease. E. Stanmore Bishop.
83 *Physiologic or Functional Albuminuria. Samuel West.
84 The Termination of a Case of Recurrent Mammary Cancer Treated by Oöphorectomy. G. Ernest Herman.
85 The Preputial or Odoriferous Glands of Man. Arthur Keith and Arthur Shillitoe.

86 Carcinoma of the Duodenum; Resection; Recovery. G. A. Syme.
87 Question of Trypanosoma Infection in Man. F. Marchand and J. C. G. Ledingham.
88 Case of Lobar Pneumonia in Which the Physical Signs Persisted for Eight Weeks Accompanied by a Very Irregular Temperature. J. M. Bennion.
89 Atmospheric Temperature and Smallpox. David Sivewright.
90 Case of Rupture of the Left Auricle. F. W. Foot. With a Note by F. De Havilland Hall.
91 Notes and Comments on Five Cases in Which Chloroform Anesthesia was Carried Out by Dubious Apparatus. P. M. Chapman.

82. Abdominal Surgical Disease.—Bishop thinks cholecystitis may be caused by other organisms than the *Bacillus coli* and *B. typhosus*. In speaking of morbid changes in the large intestine he says that, in cases of painful defecation, attention should be directed to the anus and rectum. It is not safe to attribute the trouble to symptoms like hemorrhoids, etc., found there, but a complete rectal exploration is necessary. He mentions Houston's valves and the operations that have been suggested for the removal of the hypertrophy, growths in the sigmoid flexure and the treatment of mucocolitis. He speaks favorably of the operation of appendicostomy of Weir which has proven satisfactory in the one case in which he has used it.

83. Physiologic Albuminuria.—The conclusions of West's paper are summed up in the following:

1. Albuminuria may occur as a transitory symptom in persons who, except for this symptom, may be judged to be perfectly healthy, for they appear to be at the time and remain so. 2. But it may also occur in persons who though they appear at the time to be healthy develop signs of disease subsequently. 3. It is difficult to distinguish at a given time between those who will remain well and those who will not. 4. It is difficult to exclude for certain many of the pathologic causes to which the albumin might be due. In other words, though there may be no proof that these causes are present, there is equally no proof that they are absent, and in some cases the result shows that they were not absent. 5. Speaking generally, the larger the amount of albumin in the urine and the longer it persists the greater the probability of some permanent disease. 6. Continued observation of these cases shows that the so-called physiologic albuminuria does very appreciably increase the risk of life and this risk grows rapidly with every year of age after 30 years. As the result of the foregoing proposition we are led to the general conclusion that functional albuminuria is never, strictly speaking, physiologic at all, but that it is, on the contrary, always pathologic though not necessarily renal.

The Practitioner, London.

January.

92 Enteric or Typhoid Fever. William Broadbent.
93 *Enteric Fever, with Special Reference to Egypt. F. M. Sandwith.
94 *Enteric Fever in India. Andrew Duncan.
95 *Typhoid Fever in China. James Cantlie.
96 *Some Reflections on Enteric-fever Infection in Camps. H. H. Tooth.
97 *Channels of Typhoid Infection in London. George Newman.
98 Etiology and Prevention of Enteric Fever. H. E. Leigh Canney.
99 *Rigors in Typhoid Fever Apart from Any Recognizable Complication. Charles Bolton.
100 *Anti-typhoid Inoculation. A. E. Wright.
101 The Treatment of Enteric Fever. John W. Moore.
102 The Treatment of Enteric Fever. Herbert F. Hawkins.
103 *On the Importance of an Early Diagnosis of Perforation in Typhoid Fever. Hector Mackenzie.
104 *The Treatment of Typhoid Fever in the Johns Hopkins Hospital. Thomas McCrae.
105 "Paratyphoid" Fever. R. Tanner Hewlett.

93. Typhoid Fever.—Sandwith describes the conditions of typhoid fever in Egypt. The natives appear to be practically immune, especially in the rural districts, though during military service they are to a certain extent susceptible to it, but much less so than European soldiers. Europeans in Egypt have to use the same precautions against typhoid as elsewhere.

94. Typhoid in India.—Enteric fever appears to be common in India. Before the introduction of the Widal test it was largely overlooked among the natives as the symptoms appear to be somewhat different than those in European cases. He has only seen one classical enteric temperature chart in all his experiences there and that was in a native of the mountain regions. The classical temperature course is also rare in European cases.

95. Typhoid in China.—Cantlie says that typhoid fever is common among Europeans in certain cities in China and scarcely met with in others, and among the Chinese is rare anywhere. Of course, the statistics as to the Chinese are not complete, as they prefer their own physicians, though they go freely to the missionaries for surgical disorders. The method of preparing their food protects them. They eat very little uncooked food and drink but little but what has been boiled. The use of milk is rare. In Shanghai typhoid is very frequent, somewhat less so in Hong Kong. In the interior cities like Chunking, Chinkiang, Soochow, Ningpo and other places, it is hardly known even among Europeans. While the use of human fecal matter for manure is general in China, yet it undergoes fermentation and bacterial treatment in cemented tanks before it is used and it is possible that even the raw vegetables may not be dangerous as regards spreading the disease. The type of the disease in Hong Kong is rather unpronounced. Chinese children are subject to the infection, as has been shown by their experience in orphan homes under European management.

96. Typhoid in Camps.—Tooth discusses the subject of the cause of typhoid fever among soldiers and mentions, besides drinking impure water, the possibility of its conveyance by bathing, soil infection, sand storms, flies and the crowded condition of the tents.

97. Typhoid Infection in London.—Newman points out that while the case rate of typhoid in London remains fairly constant year by year, water-borne infection can not be considered the chief cause. Personal contact and shellfish, he thinks, are the main channels of infection. A further study in this line is required.

99. Rigors in Typhoid Fever.—Bolton discusses this somewhat unusual symptom, reporting a case and giving the temperature charts. Violent rigors usually indicate the presence of some toxic substance in the circulation. The case reported seems to support the theory that some intestinal irritation is in many of these cases responsible, though there is no doubt that the rigors may be excited by peripheral irritation. It does not appear that they materially affect the prognosis, though they produce trying effects on the patient. Their treatment must be on general principles, bearing in mind that they are not of such serious import as their appearance might lead one to think.

100. Anti-Typhoid Inoculation.—Wright's article appears here only in the first part describing the methods and the history of inoculation. He remarks on the cumulative effects of two or more inoculations. When the second one falls on a positive phase of the former inoculation, or on any period when the blood contains an increased quantity of antitropic substances, there is developed a cumulative high tide of immunity. When, on the contrary, the inoculation falls on a negative phase of the first, there is a cumulative susceptibility produced. In the second part of his paper he proposes to discuss the application of these principles to preventive inoculation.

103. Typhoid Perforation.—Mackenzie insists on the importance of early diagnosis and calls attention to certain confirmatory signs. Abdominal pain should be the most important danger signal. Vomiting, nausea, hiccough, repeated action of the bowels at short intervals, rigors, swelling, mental excitement or symptoms of perforation may accompany the pain. The doctor should be immediately summoned and should look for confirmatory signs; notice any change in the temperature, a sudden drop or rise, though steady temperature does not exclude perforation. There may be a change in the pulse, the beats becoming more frequent and weaker, though increased rapidity does not always follow. There may be a change in the facies, a pinched or drawn look, depression of the corners of the mouth, sinking of the eyes, blueness of the lips and swelling, but still more important is the abdominal pain, usually most marked over the lower half of the abdomen. Rigidity is exceedingly important. The presence of softness or flaccidity is always reassuring. Obliteration of liver dulness is a valuable sign if present, though not always free from ambiguity. If there is no tenderness, if the abdominal wall is flaccid, the liver dulness and the flanks normal, one may rest assured that there is no perforation. He thinks operation will be much more successful in the future than it has been in the past.

104. Treatment of Typhoid.—McCrae gives the treatment as followed in the Johns Hopkins Hospital. The diet consists chiefly of milk and albumin water. Sometimes ice cream, tea

and coffee and clear soups are allowed. Beef tea and the peptonoids are never given. If a change of diet is required, reduction or exclusion of milk is practiced, and only whey or albumin given. More patients are over- than under-fed. The necessity of giving large amounts of water is insisted on. Hydrotherapy by the Brand method is followed and the constant rubbing while in the bath is insisted on. The general management consists in giving the patients rest, while diet and baths are employed. A useful mouth wash is 1 to 20 solution of carbolic acid with listerine and glycerin, āā ℥i, and boric acid solution (saturated) ad ℥xviii, used after each nourishment. A condition of constipation is preferred and is the rule. If necessary the bowels are moved every second day by a simple enema. Alcohol is not given as a routine, most patients going on to recovery without a drop. It is given freely if there is any sign of toxemia or failing circulation. Many patients get no medicine at all; none of the so-called intestinal antiseptics is employed. Strychnin is administered for heart weakening and sometimes digitalin, small doses of bromids and codein for headaches. In severe toxemia salol infusions are used if the patient can not take enough fluid by the mouth. Convalescence may be most troublesome. There is safety in not returning to solid food too soon. Soft food is taken after a few days of normal temperature and soft toast is added at the end of a week. From the seventh to the tenth day scraped beef or sweetbread is given. After this the diet is increased. The patient is usually propped up in bed about the tenth day and allowed up in a wheel chair about three or four days later For anemia iron is given. The complications of hemorrhage, cholecystitis, perforation, etc., are noticed. McCrae protests against giving opium in hemorrhage cases as it interferes with the diagnosis. In case of cholecystitis, operation not too much delayed is advisable, though it is often difficult to decide. In perforation early operation is insisted on. Disinfection of the urine is important; urotropin in 10 to 15 gr. doses ought to be given by the mouth until the urine is clear. Tender toes is a troublesome condition, and painting them with equal parts of iodin and alcohol nearly always gives relief. To sum up, a simple diet with abundance of water, systematic baths, drugs given only when special indications arise, are the important points. Special attention should be given to the recognition of early abdominal complications and prompt operative treatment when required.

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106 Cold Weather Mosquito Notes from the United Provinces—Northwest India. (To be continued.) G. M. Giles.
107 A New Filaria in a Monkey. G. C. Low.
108 Calabar Swellings on the Upper Congo. S. H. Habershon.
109 Cholera on Assam Tea Gardens. William E. L. Elliott.
110 Morphologic Considerations on the Anterior Extremity of the Trypanosome. Jules Guiart.
111 Tropical Hygiene. (Continued.) W. J. Simpson.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-graduate Medical School. Vol. III. The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, C.M., M.D., D.C.L., Albert H. Andrews, M.D., Gustavus P. Head, M.D. December, 1903. Cloth. Pp. 332. Price, $1.50. Chicago: Year Book Publishers.

A TEXT-BOOK OF LEGAL MEDICINE AND TOXICOLOGY. Edited by Frederick Peterson, M.D., Chief of Clinic, Nervous Department of the College of Physicians and Surgeons, New York; and Walter S. Haines, M.D., Professor of Chemistry, Pharmacy and Toxicology, Rush Medical College, in Affiliation with the University of Chicago. In Two Volumes. Fully Illustrated. Cloth. Vol. II. Pp. 750. Price, $5.00. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

A MANUAL OF OPERATIVE SURGERY. By Sir Frederick Treves, Bart, K.C.V.O., C.B., LL.D., F.R.C.S., Sergeant Surgeon-in-Ordinary to H. M. the King. New Edition Revised by the Author and Jonathan Hutchinson, Jun., F.R.C.S., Surgeon to the London Hospital. With Upwards of 470 Illustrations. In Two Volumes. Vol. II. Half Morocco. Pp. 824. Price, $6.50 net. Philadelphia and New York: Lea Brothers & Co.

U. S. DEPARTMENT OF AGRICULTURE. The Available Energy of Timothy Hay. Investigations with the Respiration Calorimeter, in Co-operation with the Pennsylvania State College Agricultural Experiment Station. By Henry Prentiss Armsby, Ph.D., and J. August Fries, B.S. Paper. Pp. 77. Washington: Government Printing Office. 1903.

THE TREATMENT OF FRACTURES: With Notes on a Few Common Dislocations. By Chas. L. Scudder, M.D., Surgeon to the Massachusetts General Hospital. Fourth Edition, Thoroughly Revised. With Nearly 700 Original Illustrations. Cloth. Pp. 554. Price, $5.00. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

THE DISTRIBUTION OF BLOOD VESSELS IN THE LABYRINTH OF THE EAR OF SUS SCROFA DOMESTICUS. By George E. Shambaugh, Instructor in the Anatomy of Ear, Nose and Throat. Printed from Vol. X. The Decennial Publications. Paper. Price, $1.25. Chicago: University of Chicago Press. 1903.

SOCIAL DISEASES AND MARRIAGE. SOCIAL PROPHYLAXIS. By Prince A. Morrow, A.M., M.D., Emeritus Professor of Genito-urinary Diseases in the University and Bellevue Hospital Medical College, New York. Cloth. Pp. 390. Price $3.00 net. New York and Philadelphia: Lea Brothers & Co. 1904.

THE PREVENTION OF CONSUMPTION. By Alfred Hillier, M.D., C.M., B.A., Secretary of the National Association for the Prevention of Consumption (London). Revised by Professor R. Koch. With Illustrations. Cloth. Pp. 226. Price, $1.50 net. New York and Bombay: Longmans, Green & Co. 1903.

THE SELF-CURE OF CONSUMPTION WITHOUT MEDICINE, with a Chapter on the Prevention of Consumption and Other Diseases. By Charles H. Stanley Davis, M.D., Ph.D., Member of the Connecticut State Medical Society. Cloth. Pp. 176. Price, 75 cents. New York: E. B. Treat & Co. 1904.

THIRD ANNUAL REPORT OF THE NEW YORK STATE HOSPITAL FOR THE CARE OF CRIPPLES AND DEFORMED CHILDREN, for the Year Ending September 30, 1903. Hospital Located at Tarrytown, N. Y. 1903. Paper. Pp. 28. Albany: J. B. Lyon Company. 1904.

THE BLUES (Spianchnic Neurasthenia), Causes and Cure. By Albert Abrams, A.M., M.D., (Heidelberg), F.A.M.S., Consulting Physician, Denver National Hospital for Consumptives. Illustrated. Pp. 240. Price, $1.50. New York: E. B. Treat & Co. 1904.

CHART OF ACUTE POISONING, Giving Descriptive Classification and Varieties, with Special Symptoms, Chemical and Physiologic Antidotes, Fatal Dose, Simple Tests and Remarks on Treatment. For Gratuitous Distribution. New York: Victor Koechl & Co.

PROSTATIC HYPERTROPHY, from Every Surgical Standpoint. By George M. Phillips, M.D., and Forty Distinguished Authorities. Edited and Compiled by S. C. Martin, Jr., M.D. Cloth. Pp. 176. Price, $1.75. St. Louis: Lewis S. Matthews & Co.

LESSONS ON MASSAGE. By Margaret D. Palmer, Masseuse and Manager of the Massage Department of the London Hospital. Second Edition. Cloth. Pp. 261. Price, $2.50. New York: William Wood & Co. 1904.

THE WORLD 1904. Almanac and Encyclopedia and Officially Compiled Guide to the Louisiana Purchase Exposition. Paper. Pp. 541. Price, 25 cents. By mail, 35 cents. New York: Press Publishing Co.

GYNECOLOGICAL NURSING. By Netta Stewart, Sister in the Extramural Gynecological Wards of the Royal Infirmary, Edinburgh. Cloth. Pp. 174. Price, $1.00. New York: William Wood & Co. 1903.

ARE WE TO HAVE A UNITED MEDICAL PROFESSION? By Charles S. Mack, M.D., La Porte, Ind. 1904. Pasteboard. Pp. 44. Price, $0.25, postpaid. La Porte, Ind.: Herald Print.

THE NUTRITION OF THE INFANT. By Ralph Vincent, M.D., Member of the Royal College of Physicians. Cloth. Pp. 295. Price, $3.50. New York: William Wood & Co. 1904.

REPORT OF THE LIBRARY COMMITTEE OF THE FACULTY OF MEDICINE, McGILL UNIVERSITY, Montreal, Canada, 1902-1903. Paper. Pp. 17. Montreal: Modern Printing Company.

NINETEENTH REPORT OF THE STATE BOARD OF HEALTH OF WISCONSIN. September 30, 1902. Cloth. Pp. 304. Madison: Democrat Printing Company. 1903.

New Patents.

Patents of interest to physicians, January 5 and 12:

749014. Invalid sling. Perry W. Atkinson, Troy Center, Wis.
748581. Ear. Charles E. Carll, Indianapolis.
749128. Sterilizer. Arthur Castle, Rochester, N. Y.
748934. Machine for operating on corns. John E. Doldt, Portland, Me.
748708. Insoluble gelatinous product and producing same. Henry V. Dunham, New York.
748709. Casein cellulose composition and producing same. Henry V. Dunham, New York.
748732. Optometrist's trial-frame. Charles L. Hogue, San Francisco.
748752. Shield for clinical thermometers. Eugene O. Koeneman, Eldora, Iowa.
748636. Receptacle for disinfectants. Wm. L. McDonald, Chicago.
749078. Manufacturing ether. Otto Meyer, Richmond, Va.
748650. Pessary. Frank L. Priest, Dallas, Texas.
749547. Pasteurizing. Michael L. Rosenmeier, Cumberland, Md.
749180. Surgical pan. Wm. A. Galloway, Xenia, Ohio.
749555. Truss. Jacob Harris, St. Louis.
749089. Surgical instrument. Thomas A. Houghton, Rochester, N. Y.
749090. Massage instrument. Nicolay Jacobsen, Christiania, Norway.
749213. Electromagnetic device for vibratory massage. Eugen K. Muller, Zurich, Switzerland.
749220. Medicated tampon. Edmund M. Pond, Rutland, Vt.
749453. Attaching device for sanitary napkins. Charles H. Schopbach, Aurora, Ill.